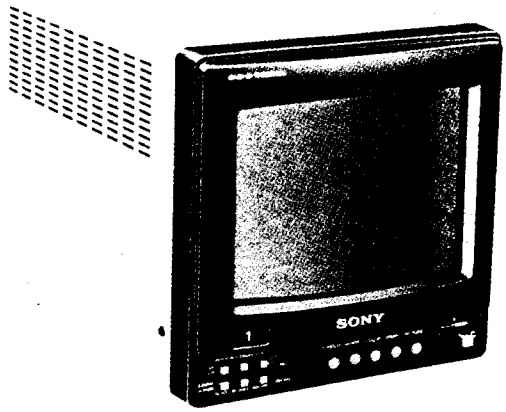
PVM-9220ME

SERVICE MANUAL

AEP Model

Chassis No. SCC-681A-A



August, 1985

SPECIFICATIONS

Color system	PAL and SECAM systems, switched automatically
Picture tube	Microblack Trinitron tube Approx. 195 mm (9 inches) (Approx. 221 mm picture measured diagonally) 70-degree deflection
Resolution	250 TV lines (B/W)
Color temperature	6500°K
Frequency response	4 MHz (−3 dB)
Horizontal linearity	±8%
Vertical linearity	±8%
Line pull range	Horizontal ±500 Hz
Overscan of the picture	6%
Underscan of the picture	5%
H/V delay	Horizontal : Approx. 1/4 line Vertical : Approx. 1/2 field
Return loss	5 MHz, −30 dB (VIDEO A IN, VIDEO B IN)
Zooming	Within 3%
Convergence	Central area 0.5 mm Periphery 0.7 mm
Brightness	More than 50 foot-lamberts
Inputs	VIDEO IN (VIDEO A, VIDEO B) : BNC connector Composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative Non-composite 0.7 V p-p EXT SYNC IN : BNC connector Composite sync 4 V p-p ±6 dB, sync negative, 75 ohms and high impedance switchable
Loop-through outputs	VIDEO OUT (VIDEO A, VIDEO B) : BNC connector Composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative Non-composite 0.7 V p-p EXT SYNC OUT : BNC connector Composite sync 4 V p-p ±6 dB, sync negative, 75 ohms and high impedance switchable
TALLY connector	4-pin DIN connector
Power requirements	220/240 V ac, 50/60 Hz
Power consumption	35 W ac, max.

— Continued on next page —

TRINITRON ®
COLOR VIDEO MONITOR
SONY ®

MICROFILM

MON

Dimensions	Approx. 216 × 219 × 319 mm (w/h/d) ($8^5/_8 \times 8^5/_8 \times 12^5/_8$ inches) incl. projecting parts and controls
Weight	Approx. 7.5 kg (16 lb 9 oz) not incl. accessories
Accessories supplied	AC power cord (1) Tally connector (4-pin DIN) (1) Number plate (1 set)
Optional accessory	Mounting bracket MB-504

While the information given is true at the time of printing, small production changes in the course of our company's policy of improvement through reseach and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

Your dealer may not handle the above optional accessory. Please ask the dealer for detailed information about the optional accessories available in your country.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1
GENERAL

1-1. FEATURES

Microblack™ Trinitron® picture tube
The Microblack Trinitron picture tube gives a high resolution, high contrast picture.

PAL/SECAM broadcasting standard receivable
The monitor can receive PAL and SECAM signals. The appropriate broadcasting standard is selected automatically.

Push-to-lock controls
In the locked position, the controls are protected from damage during carriage of the unit. The protruding position allows easier operation.

Monitor of sync signals
The H/V-DELAY switch allows horizontal and vertical sync signals to be displayed on the screen.

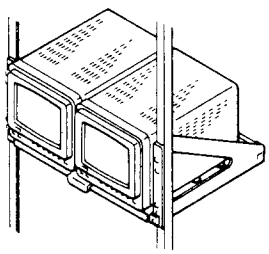
Blue only picture
By using the B-ONLY switch, the picture can be displayed in blue and black only, facilitating observation of VTR noise.

Underscan mode
The signal normally scanned outside of the screen can be monitored in the underscan mode, providing check facility of video signals.

External sync connection
The unit can operate on an external sync signal in synchronization with other VTR equipment.

Two video inputs
Two video sources can be connected to the unit. Either input can easily be switched by pressing the INPUT select switch.

By using an optional MB-504 mounting bracket, this unit can be mounted in an EIA standard 19-inch rack.



For mounting details, refer to the instruction manual of the MB-504.

1-2. PRECAUTIONS

On safety
- Operate the unit only on 220/240 V ac.
  Use only the supplied ac power cord. Do not use any other type.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for serveral days.
- To disconnect the ac power cord, pull it out by the plug. Never pull the cord itself.

On installation
- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Keep the unit away from strong magnets or magnetic fields such as a loudspeaker or motor, as the picture may be affected.

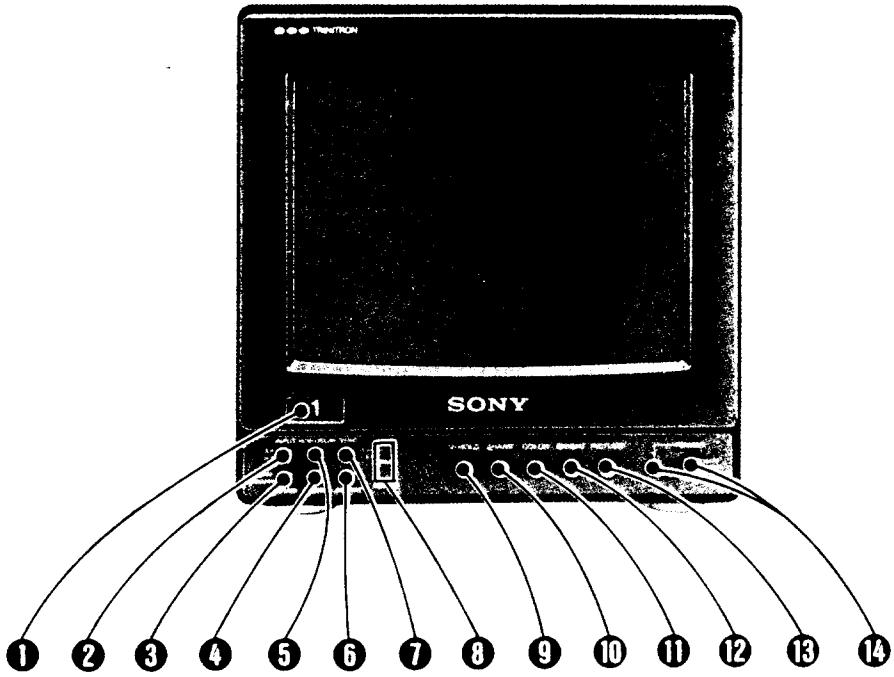
On cleaning
To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking
Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

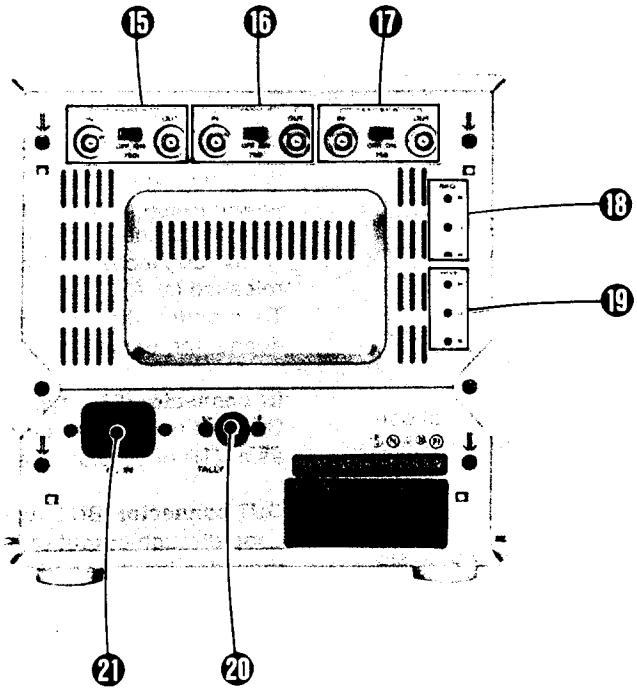
If you have any questions about this unit, contact your authorized Sony dealer.

1-3. LOCATION AND FUNCTION OF CONTROLS

Front panel



Rear panel



Each number in the text is keyed to that of the photos on page 5.

FRONT PANEL

❶ Tally lamp
This lamp is turned on and off according to the signal supplied to the TALLY connector at the rear from a control console or special-effects generator. To identify the monitor, insert the supplied number plate.

❷ INPUT select switch
Keep this switch released (⊓ A) to monitor the signal from the VIDEO A IN connector.
Depress the switch (⊔ B) to monitor the signal from the VIDEO B IN connector.

❸ SCAN mode select switch
Keep this switch released (⊓ NORM) for normal scanning.
Depress the switch (⊔ UNDER) to reduce the display size by about 5% (underscanning mode) and to view a picture which does not appear in normal scanning.

❹ B-ONLY (blue only) switch
Normally keep this switch released (⊓ NORM).
Depress the switch (⊔ BLUE) to turn off the red and green beams. The picture will be displayed in blue and black only. This facilitates observation of VTR noise.

❺ H/V-DELAY switch
Normally keep this switch released.
To monitor the sync signals, depress the switch. The picture is shifted horizontally and vertically. The horizontal sync is displayed in left approximately one quarter of the screen and the vertical sync is displayed near the center of the screen.

❻ SECAM switch
Depress this switch when a picture from SECAM color sources is distorted. The picture will become clear.

❼ SYNC switch
Normally keep this switch released (⊓ INT). The monitor is driven with the internal sync signal.
To drive the monitor with an external sync signal connected to the SYNC IN connector at the rear, depress the switch (⊔ EXT).

❽ Color system indicators
Indicate the color system of the input video signal: PAL or SECAM.

❾ V HOLD (vertical hold) control
If the picture rolls vertically, correct it with this control.

❿ SHARP (sharpness) control
Adjusts the sharpness of the picture. Clockwise rotation makes the picture sharper; counterclockwise rotation makes it softer.

⓫ COLOR control
Adjusts the color intensity of the picture. Clockwise rotation makes the picture more vivid; counterclockwise rotation makes it paler.

⓬ BRIGHT (brightness) control
Adjusts the brightness. Normally set this control at the center detent position. Clockwise rotation makes the picture brighter; counterclockwise rotation makes it darker.

⓭ PICTURE control
Adjusts the contrast, intensity and brightness simultaneously in the proper ratio.

> Before turning one of the controls ❾ to ⓭, for easier operation press on it to release the control to a protruding position.

⓮ POWER switch and indicator
To turn the monitor on, depress the POWER switch (⊔ ON). The POWER indicator lights. To turn it off, press the switch again (⊓ OFF).

REAR PANEL

⓯ VIDEO A, **⓰ VIDEO B**
Two video input connectors (VIDEO A and VIDEO B) for the composite video signals and their loop-through output connectors.
To monitor the input signals connected to the VIDEO A IN connector, keep the INPUT select switch released (⊓ A).
To monitor the input signals to the VIDEO B IN connector, depress the INPUT select switch (⊔ B).

IN connector (BNC type)
Connect to the video output of video equipment, such as a VTR or a color video camera.

OUT connector (BNC type)
Loop-through output of the IN connector. Connect to the video input of a VTR or another monitor.

75 Ω termination switch
When only the IN connector is used (the OUT connector is not used), set this switch to ON. When both the IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

⑰ **EXT SYNC (external sync)**

IN connector (BNC type)
When this monitor operates on an external sync signal, connect the reference sync signal to this connector.

OUT connector (BNC type)
Loop-through output of the EXT SYNC IN connector. Connect to the external sync input of video equipment to be synchronized with this monitor.

75 Ω termination switch
When only the EXT SYNC IN connector is used (the EXT SYNC OUT connector is not used), set this switch to ON. When both the EXT SYNC IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

⑱ **R/G/B BKG (background) controls**
Used for adjusting the white balance of the background.

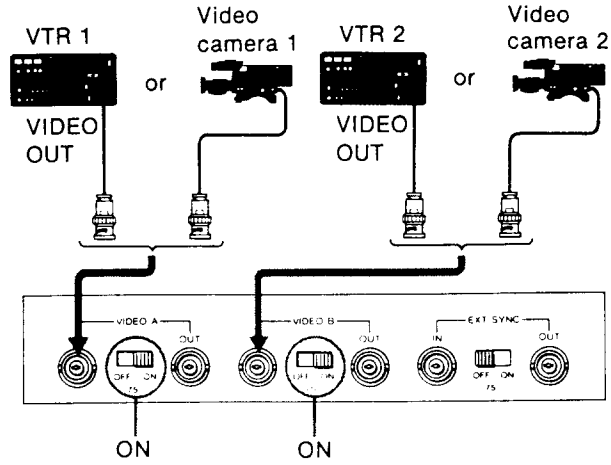
⑲ **R/G/B DRIVE controls**
Used for adjusting the white balance at the white peak.

⑳ **TALLY connector** (4-pin DIN)
Connect to the tally output of a control console, special-effects generator, etc. The tally lamp on the front panel will be turned on or off by the connected console or special-effects generator.

㉑ **AC IN socket**
Connect the supplied ac power cord to this socket and to a wall outlet.

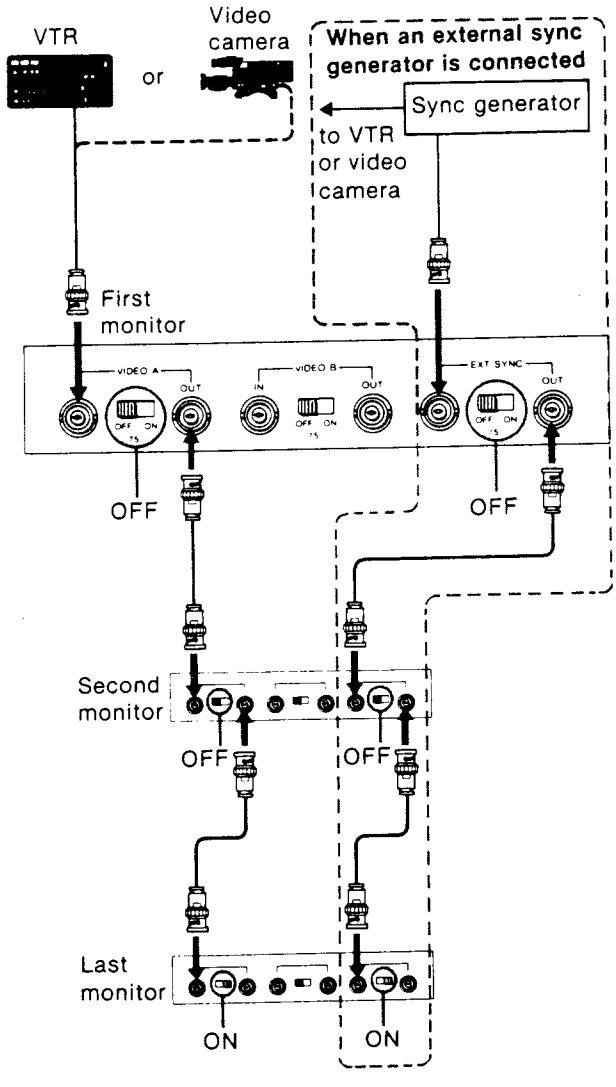
1-4. SYSTEM CONNECTIONS

CONNECTING A VTR OR CAMERA



CONNECTING SEVERAL MONITORS

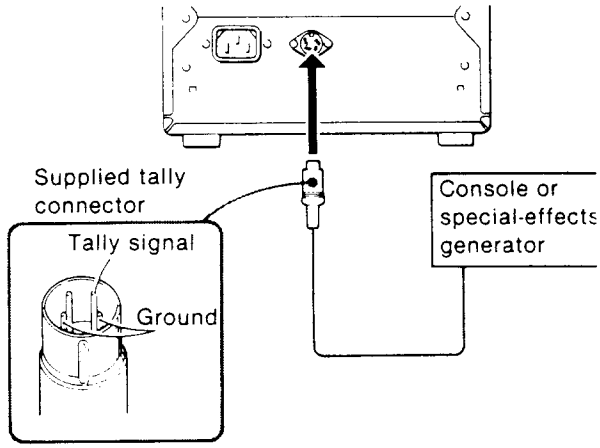
A loop-through connection is convenient for monitoring the same signal on several monitors. The VIDEO A OUT connector is for the signal connected to the VIDEO A IN connector, and VIDEO B OUT, for the signal connected to VIDEO B IN. Up to 10 monitors can be connected for each group. Set the 75 Ω termination switch of the last monitor to ON and those of the other monitors to OFF.



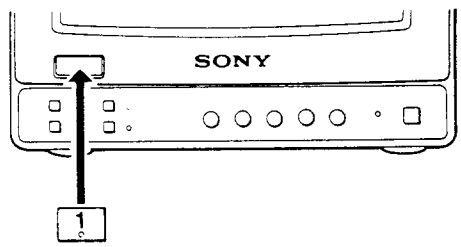
When an external sync generator is connected, depress the SYNC switch (⎓ EXT) on each monitor.

TALLY CONNECTION

To utilize the tally-lamp feature of this monitor, connec the TALLY connector at the rear of the monitor to a cor trol console, special-effects generator, etc. using th supplied tally connector. The No.1 (ground) and No. (tally) pins should be connected to the correspondin pins of the tally out connector.
The tally lamp on the front panel will be turned on or o by operating the console or special-effects generator.

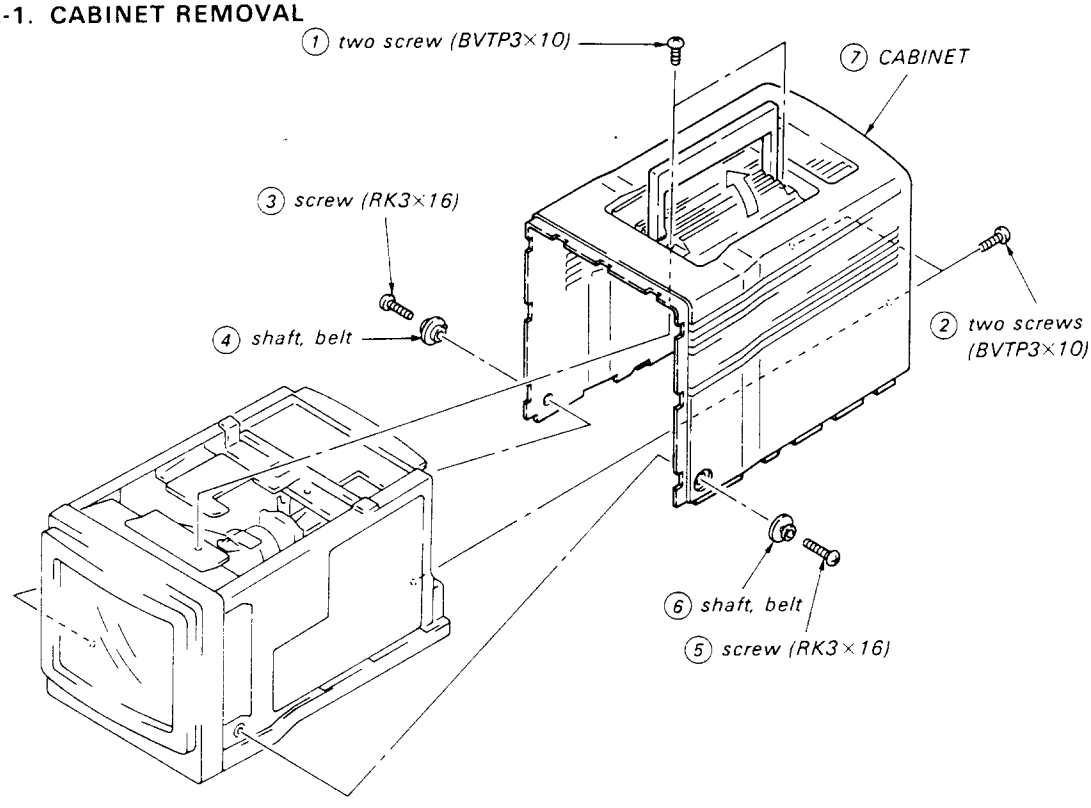


How to use the supplied number plate
To identify the monitor in your system, insert the su plied number plate under the tally lamp cover. When th tally lamp lights, the number will be illuminated.

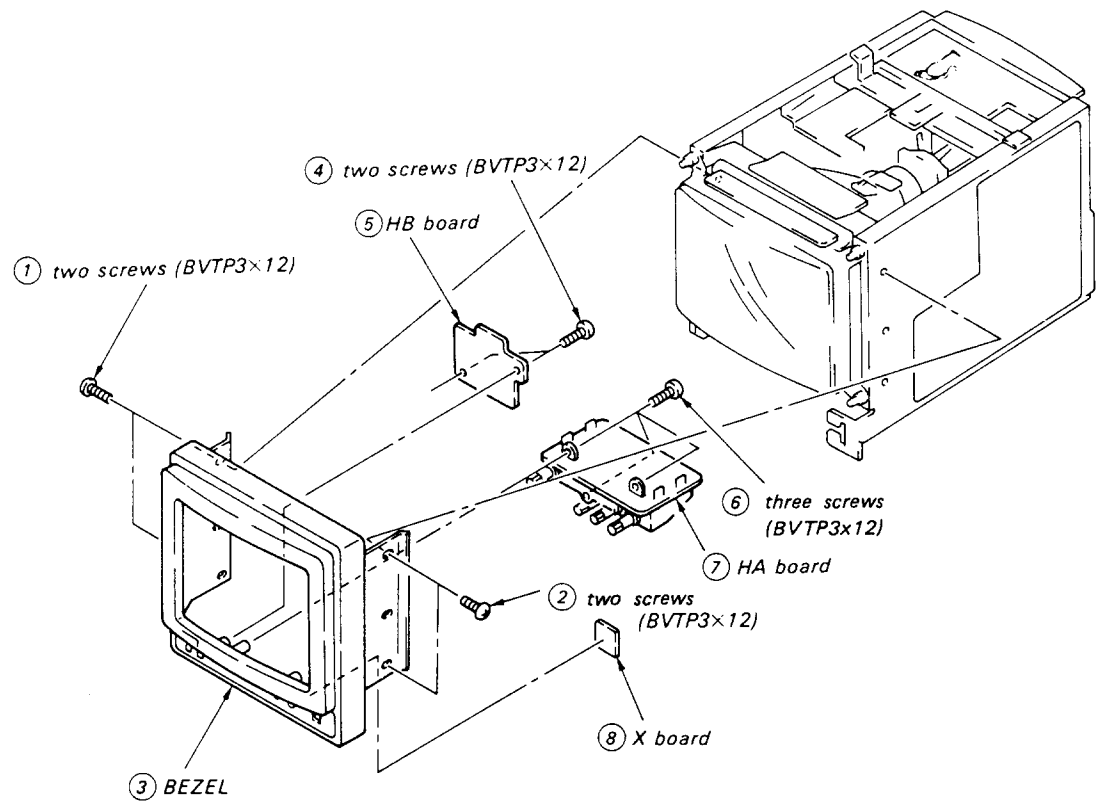


SECTION 2
DISASSEMBLY

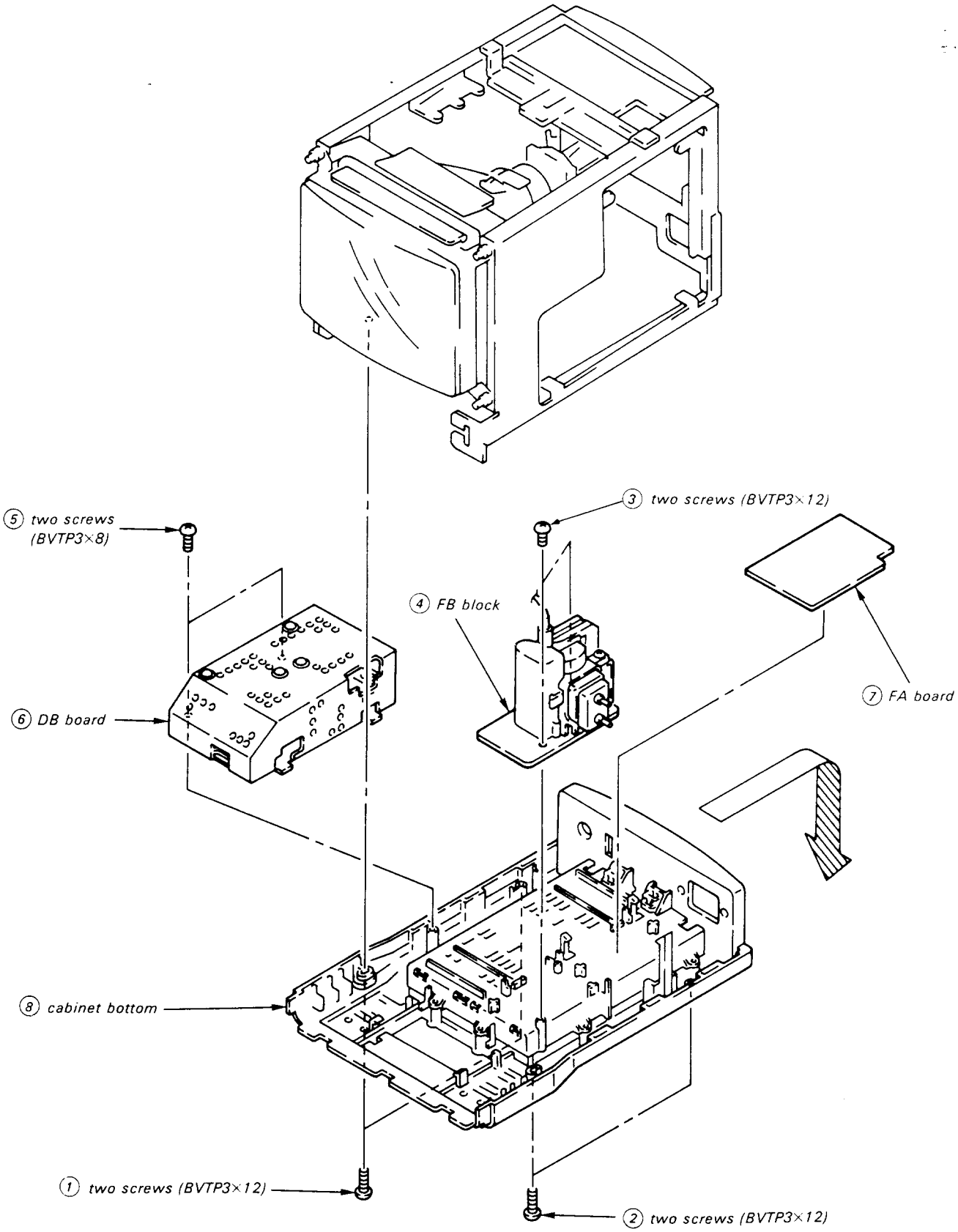
2-1. CABINET REMOVAL



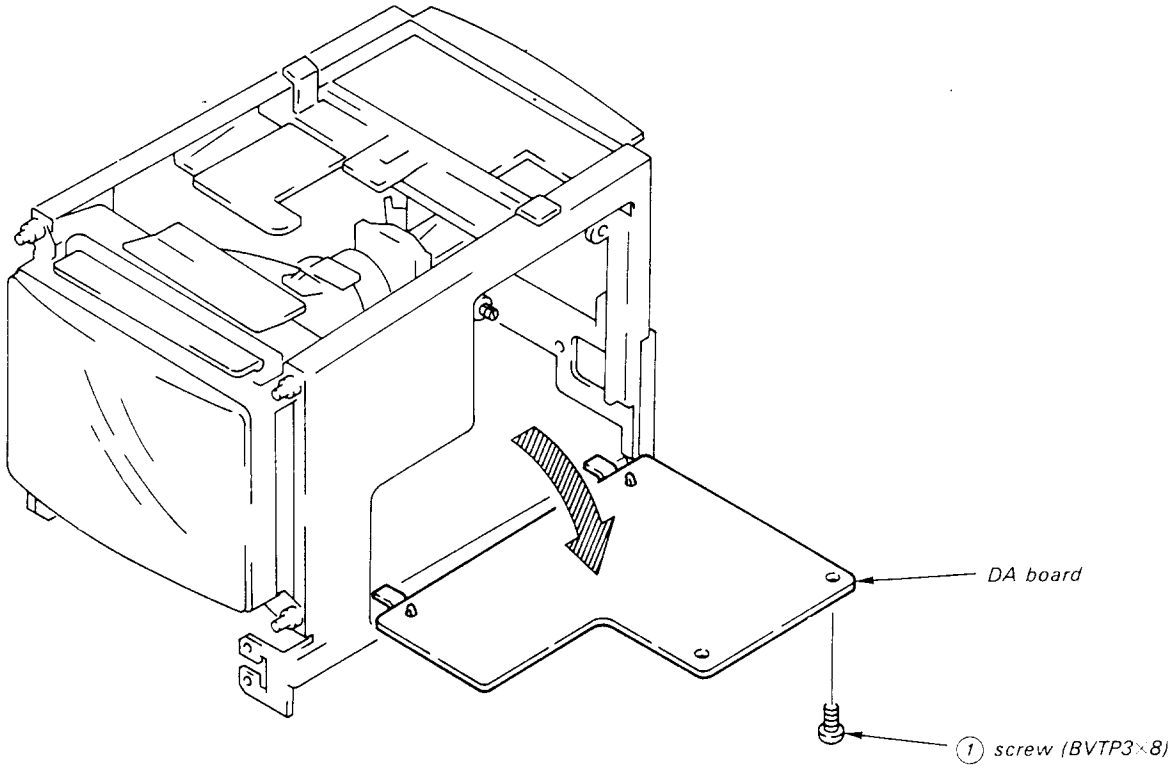
2-2. BEZEL REMOVAL (HA, HB, X BOARD)



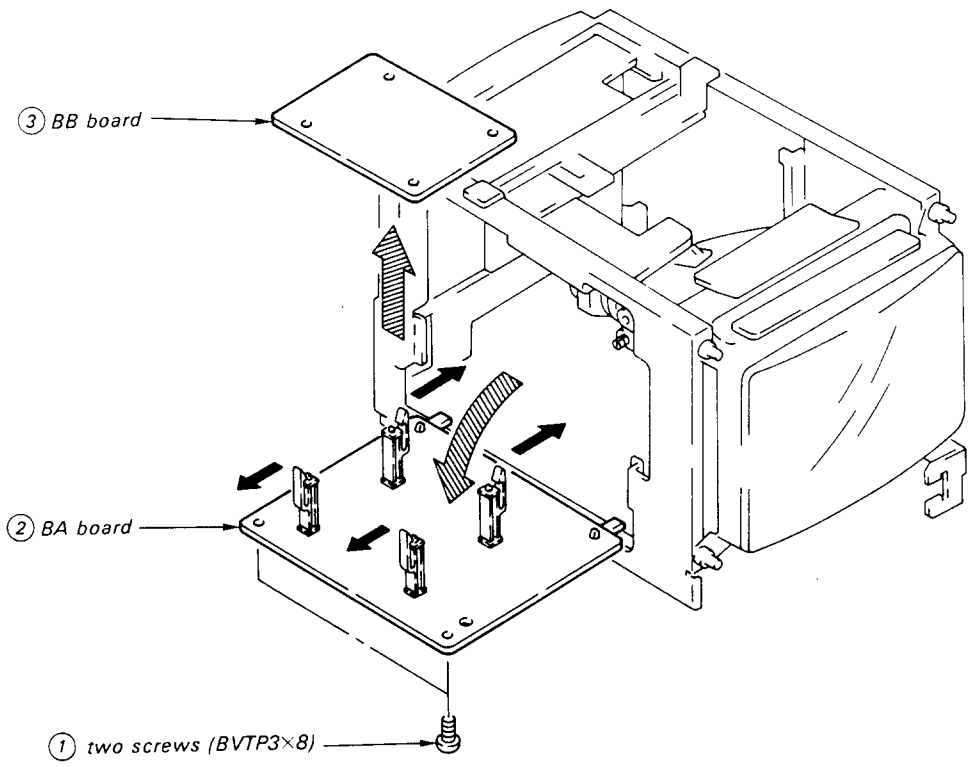
2-3. CABINET BOTTOM REMOVAL



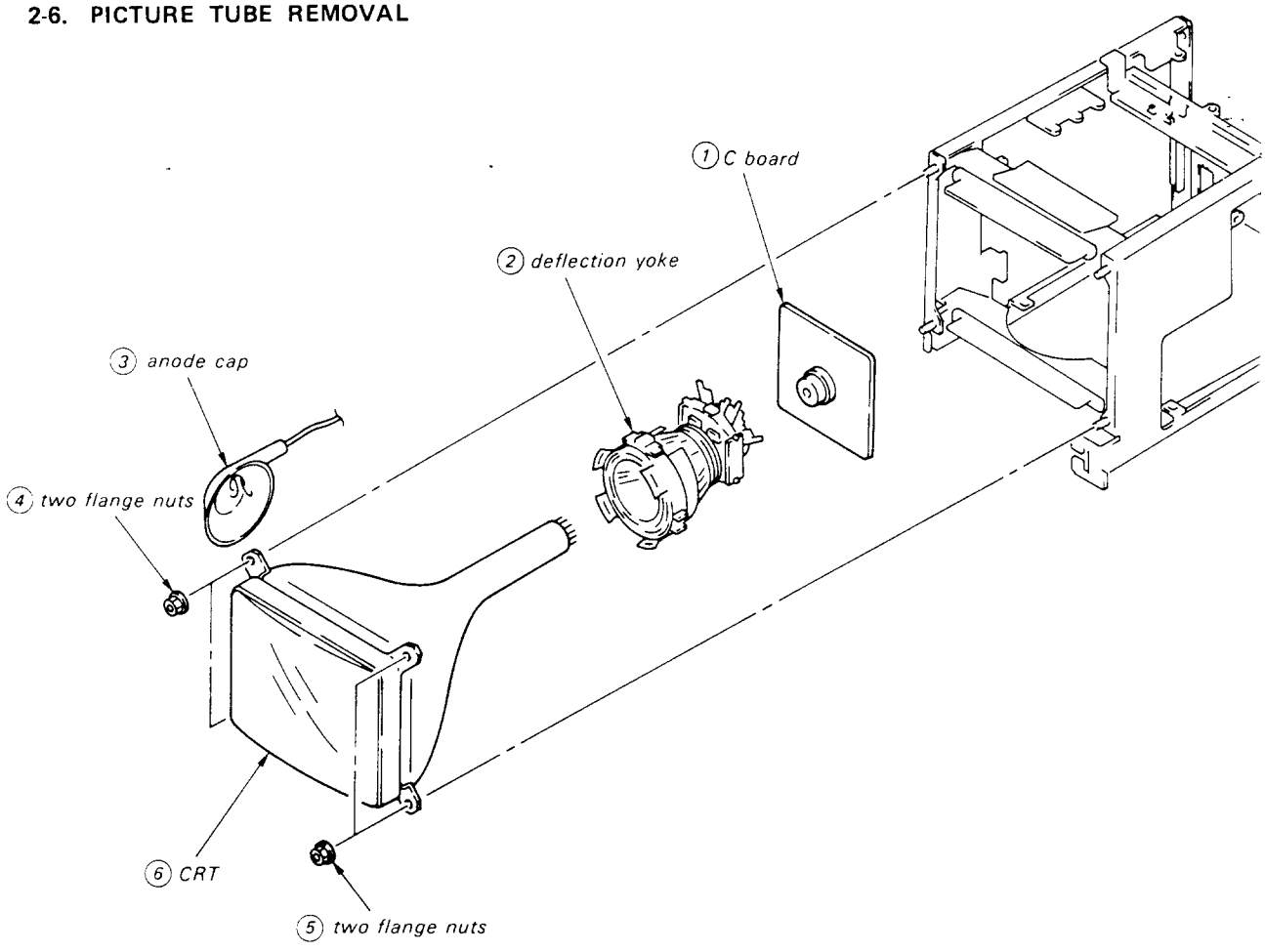
2-4. DA BOARD REMOVAL



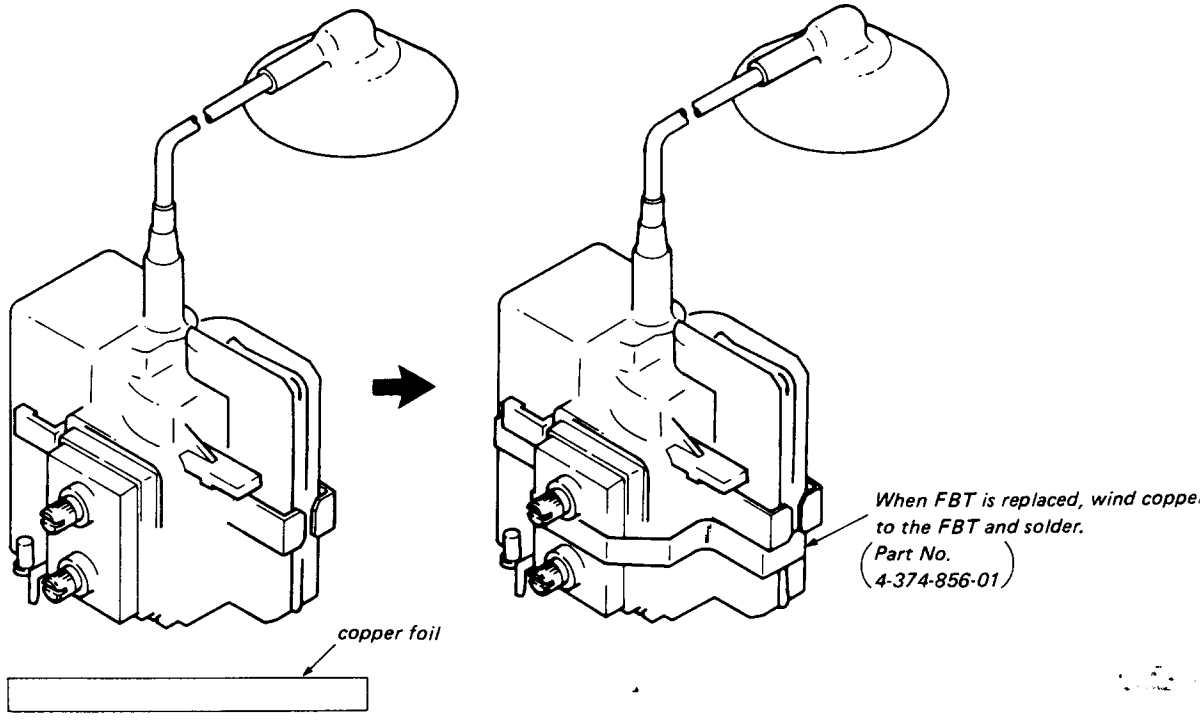
2-5. BA, BB BOARD REMOVAL



2-6. PICTURE TUBE REMOVAL



2-7. REPLACING, FBT



SECTION 3
SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Controls and switch should be set as follows unless otherwise noted:

BRT. CONTR controls ..... fully clockwise

Make the following adjustments in the order as follows given:

3-1. Beam Landing
3-2. Focus Adjustment
3-3. Convergence
3-4. White Balance

Note: Test Equipment Required
1. Color-bar/pattern generator
2. Degausser

3-1. BEAM LANDING

Preparation:

- Before starting, degauss the entire screen.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Adjust purity control to center the slide between two projections as shown in Fig. 1-1.
4. Slide deflection yoke as far forward as it will go.
5. Turn RED CUT OFF VR (RV259) MAX and GREEN (RV261) and BLUE CUT OFF RV (RV263) MIN.
6. Turn purity control to center vertical red band as shown in Fig. 1-2.
7. Slide deflection yoke back for a uniform red screen.
8. Check green and blue rasters for uniformity. Repeat the steps 6, 7 and 8.
9. Turn all CUT OFF VR (RV259, 261, 263) for mechanical CENTER.
10. Install the deflection yoke spacers.
11. Tighten the deflection yoke screw.
12. Check if mislanding appears at corners a-d as shown in Fig. 1-3. If mislanding is observed, correct it as shown in Fig. 1-4.

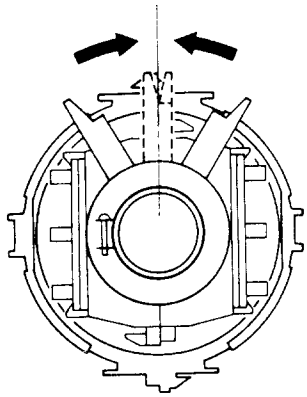


Fig. 1-1

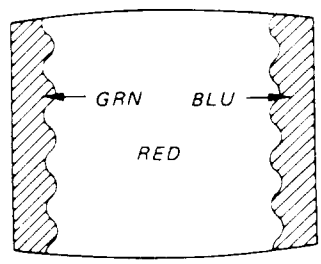
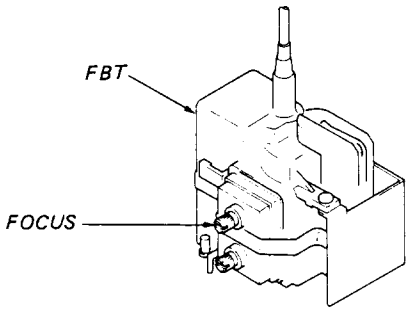


Fig. 1-2

3-2. FOCUS ADJUSTMENT

(1) Input monoscope signal.
PICTURE control 80%
BRICHT control 50%

(2) Adjust FOCUS control for a best picture at the center and both sides of the screen.



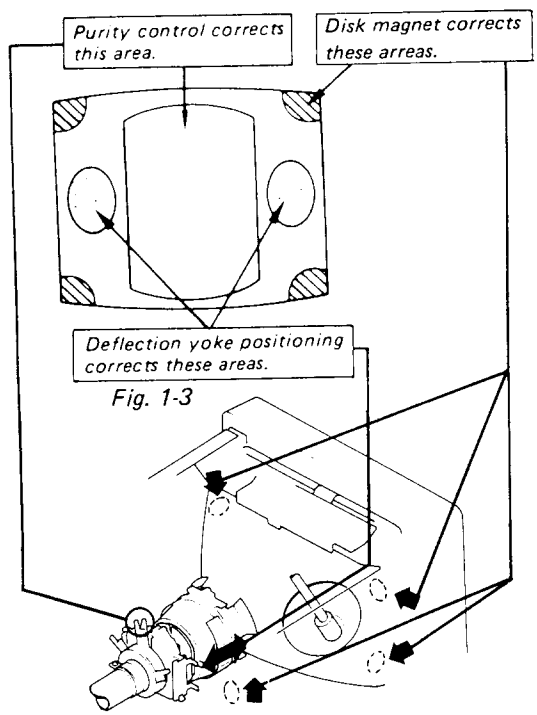

Purity control corrects this area.
Disk magnet corrects these arreas.
Deflection yoke positioning corrects these areas.

Fig. 1-3

Fig. 1-4

3-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

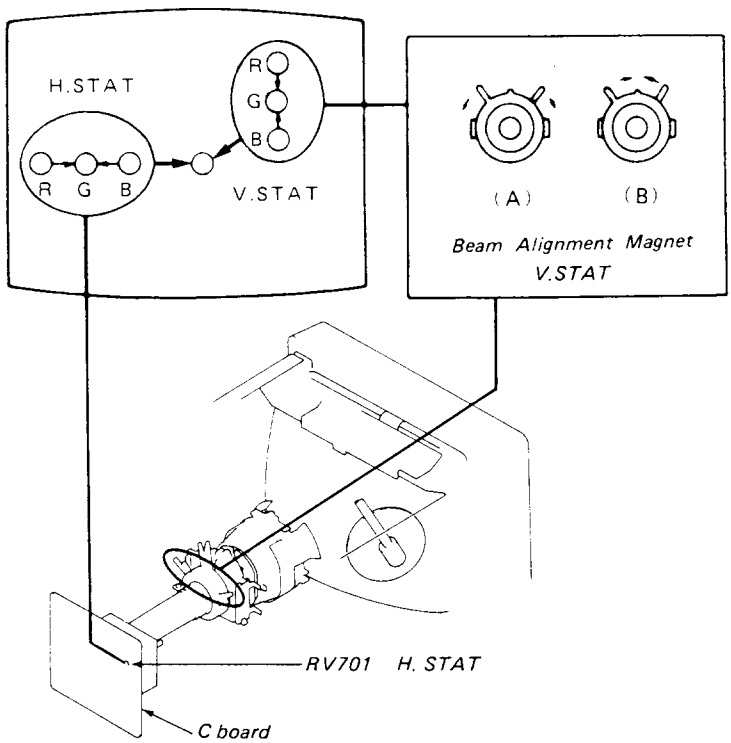
(1) Horizontal Static Convergence and Vertical Static Convergence

If blue dot does not coincide with red and green dots,

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.

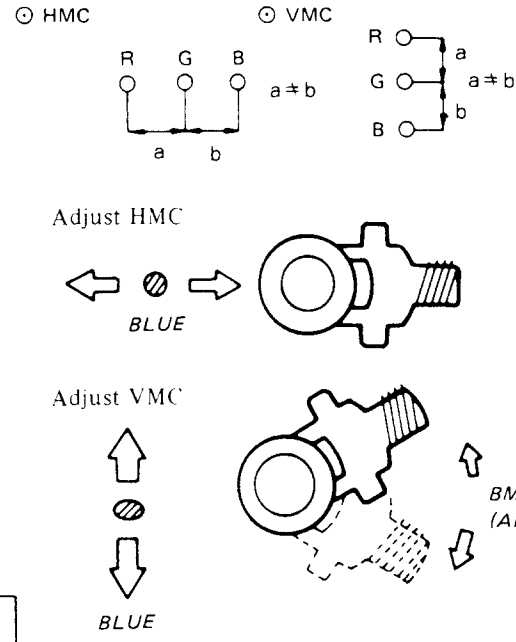


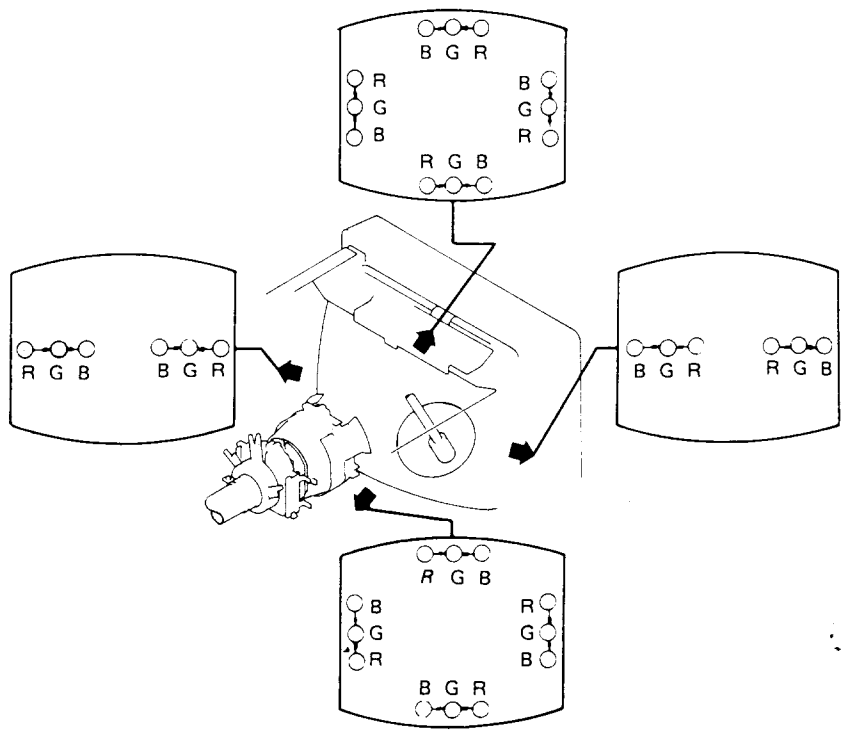
(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

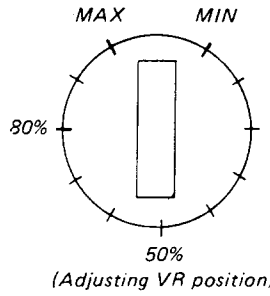




3-4. WHITE BALANCE

(1) SCREEN (G2)

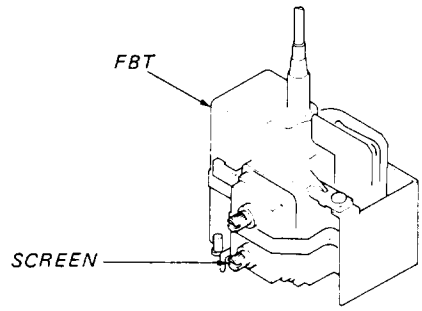
1. In put a dots pattern.
2. Set the PICTURE control at minimum and turn the BRIGHT control fully counterclock wise.
3. Confirm that BKG voltage is less than 105V dc when turning RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG).
4. Note the color which becomes visible first when turning SCREEN VR.

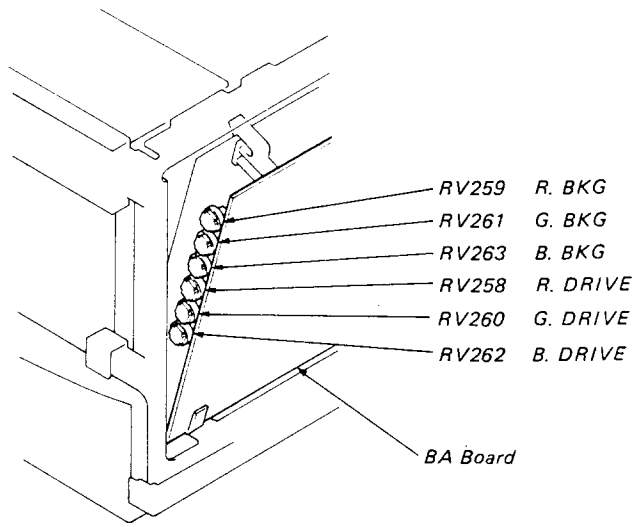


(Adjusting VR position)

(2) WHITE BALANCE

1. Input a cross-hatch pattern.
2. Set the PICTURE control to minimum and turn the BRIGHT control click position.
3. Turn RV262 (B.DRIVE), RV260 (G.DRIVE) and RV258 (R.DRIVE) fully clockwise.
4. Set RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG) to minimum.
5. Turn RV518 (SUB BRT) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning. Do not turn a BKG control for this color.
6. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch. Set the PICTURE control to maximum and turn the BRIGHT control fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat steps 1. through 6. several times.





SECTION 4
CIRCUIT ADJUSTMENTS

Note: (1) **TEST EQUIPMENT REQUIRED**
1. Oscilloscope
2. Digital multimeter
3. Color-bar/pattern generator

(2) **INPUT SIGNAL**
When making these adjustments, supply a color-bar or an off-air signal.

(3) These adjustment should be performed with the rated power supply voltage unless otherwise noted.

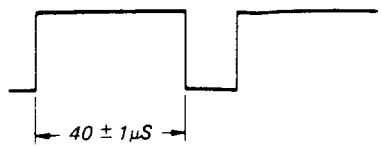
(4) **CIRCUIT ADJUSTMENTS**

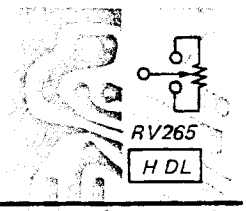
Adjustment	Circuit Board	Page
1H DELAY V. DELAY LINE PULSE DELAY	BB	16–17
SUB CONTRAST SECAM COLOR LEVEL	HA	18
ANT PAL SUB COLOR APC KILLER POINT CHROMA TRAP SECAM (ID) SECAM (B-Y) BAT ACC	BA	19–21
POWER SUPPLY OPERATION	FB	22
BLANKING OPERATION CHECK H BLANKING H FREQ V LINE UNDER SCAN, V SIZE V SIZE V CENT	DA	22–24

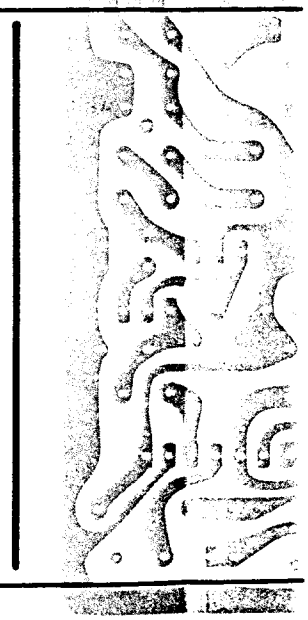
4-1. BB BOARD ADJUSTMENTS

H DELAY ADJUSTMENT

1. *Input a PAL color bar signal.*
   PICTURE . .80%
   BRT 50%
2. *Observe the connector BB-2 pin (3) the oscilloscope, and adjust RV265*







V. DELAY ADJUSTMENT

1. *Input a PAL color bar signal.*
   PICTURE 80%
   BRT 50%
2. *Observe the connector BB-2 pin (4) the oscilloscope, and adjust RV266*

DJUSTMENTS

ISTMENT

r bar signal.
%
%
nector BB-2 pin ③ waveform on
and adjust RV265 for 40 ± 1μsec.

oscilloscope

LINE PULSE DELAY ADJUSTMENT

1. Input an color bar signal.
2. Set the DELAY mode.
3. Connect dual oscilloscope at pin ② of BB-3 and pin ④ of BA-1.
4. Adjust RV257 for the waveform to becomes as Fig. 1.

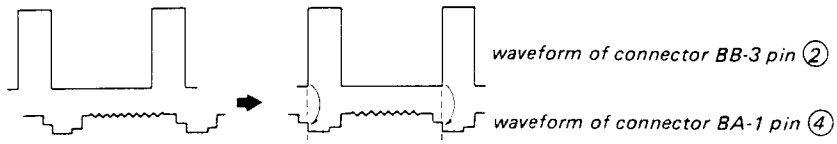


Fig. 1

oscilloscope

RV257
BLK C

RV265
H DL

RV266
V DL

7 4 1
BB-2
3

— BB Board —

BB-3
3 2 1

ISTMENT

or bar signal.
%
%
nector BB-2 pin ④ waveform on
and adjust RV266 for 10 ± 1msec.

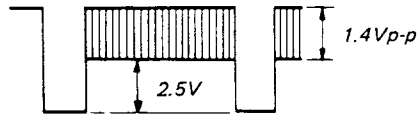
10 ± 1ms

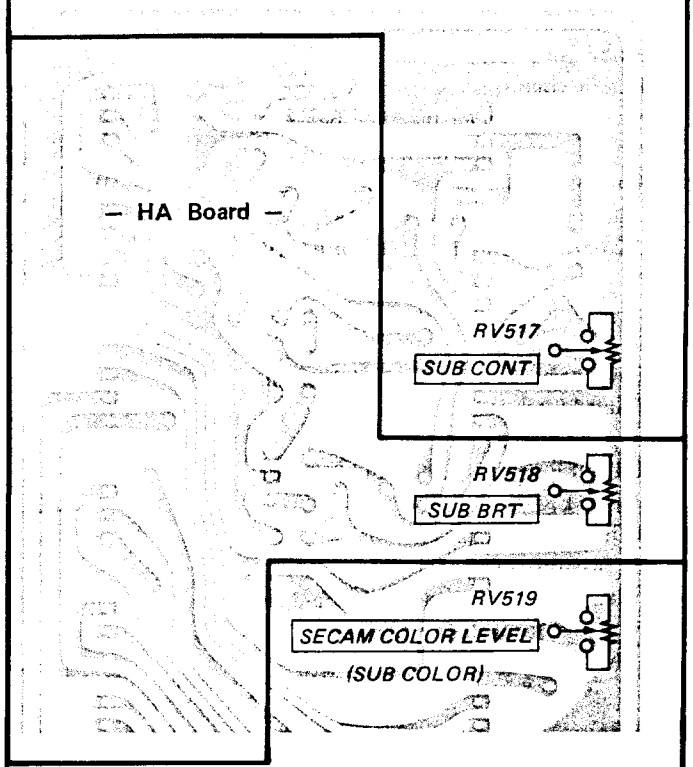
oscilloscope

4-2. HA BOARD ADJUSTMENTS

SUB CONTRAST ADJUSTMENT

1. *Input a monoscope pattern signal.*
   PICTURE 100%
   BRT 50%
2. *Observe connector BA-6 pin (3) on the oscilloscope and adjust RV508 so that the signal component is 1.4Vp-p.*





SECAM COLOR LEVEL ADJUSTMENT

1. *Input a SECAM color bar.*
2. *Connect oscilloscope at pin (3) of BA-6 connector.*
3. *Set the PICTURE control at max and COLOR control at canter.*
4. *Adjust RV519 (HA board) for the waveform at connector BA-6 pin (3) to become as Fig. 1.*

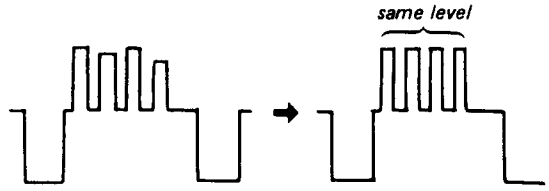


Fig. 1

4-3. BA BOARD ADJUSTMENTS

ANT PAL ADJUSTMENT

1. Input a PAL special color bar.
2. Connect an oscilloscope to pin ③ of BA-6 connector.
3. Set the COLOR control at center.
4. Adjust RV251 and RV252 for the waveform at connector BA-6 pin ③ to become as Fig. 1.

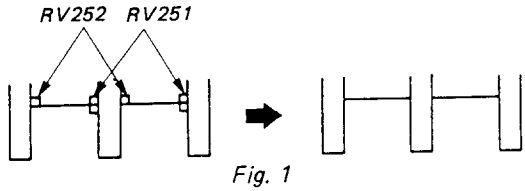
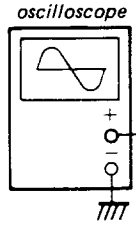


Fig. 1



SUB COLOR ADJUSTMENT

1. Input a PAL color bar signal.
   PICTURE 100%
   COLOR 50%
2. Adjust RV264 for the waveform at connector BA-6 ③ to become as Fig. 2.

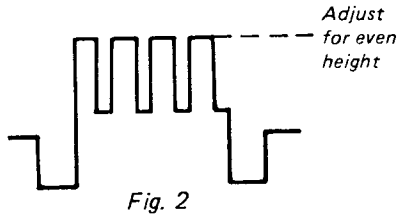
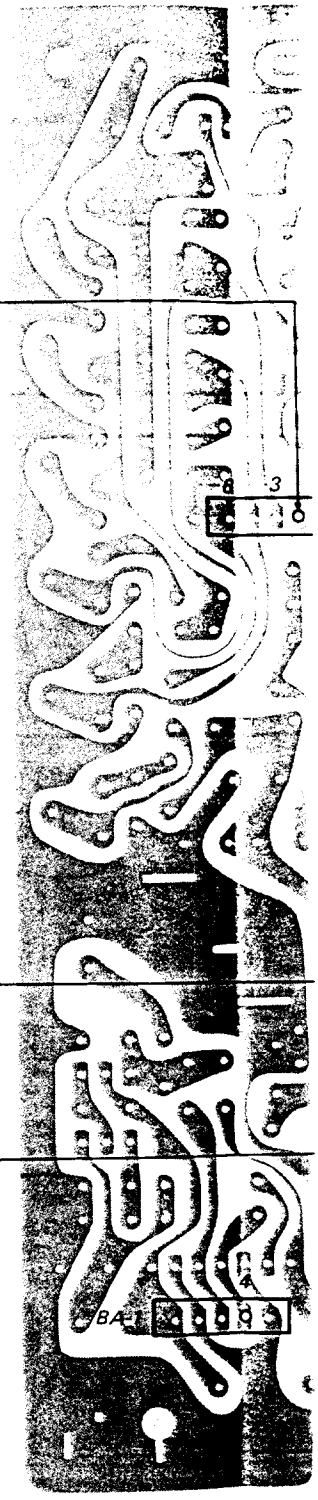


Fig. 2

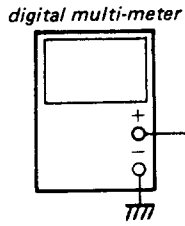
APC ADJUSTMENT

1. Input a PAL color bar signal.
   PICTURE 80%
   BRIGHT 50%
   COLOR 50%
2. Connect a 100kΩ resistor between IC253 pin ⑬ and ground (Killor circuit goes off).
3. Connect a 10μF/25V chemical capacitor between IC253 pin ⑯ and ground.
4. Adjust RV256 to obtain the stable color picture.
5. Disconnect the 100kΩ resistor and chemican capacitor.



KILLER POINT ADJUSTMENT

1. Tune in an off-air signal.
2. Connect digital multimeter between R255 and R378.
3. Adjust R255 so that the voltage is 8.3V dc.



CHROMA TRAP ADJUSTMENT

1. Input a SECAM color bar signal.
   PICTURE 80%
   BRIGHT 50%
2. Observe connector BA-6 pin ① waveform on the oscilloscope and adjust L253 for minimum chroma component.
3. Input a PAL color bar signal.
4. Observe connector BA-6 pin ① waveform on the oscilloscope and adjust L252 for minimum chroma component.

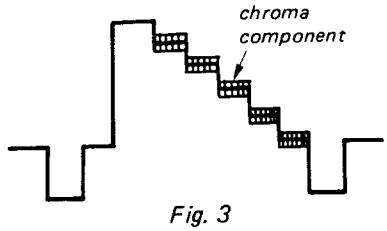
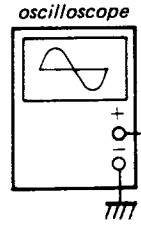
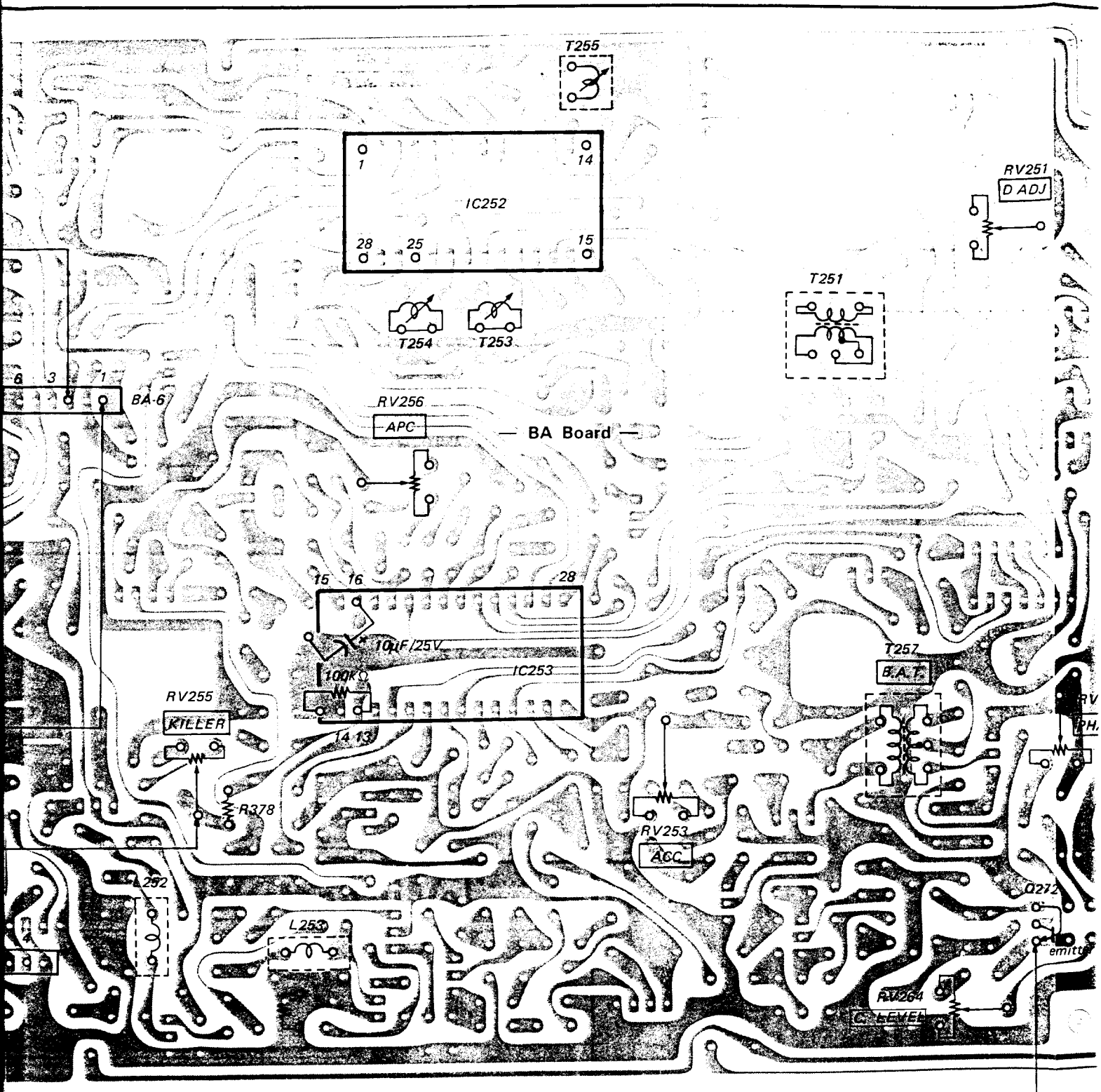
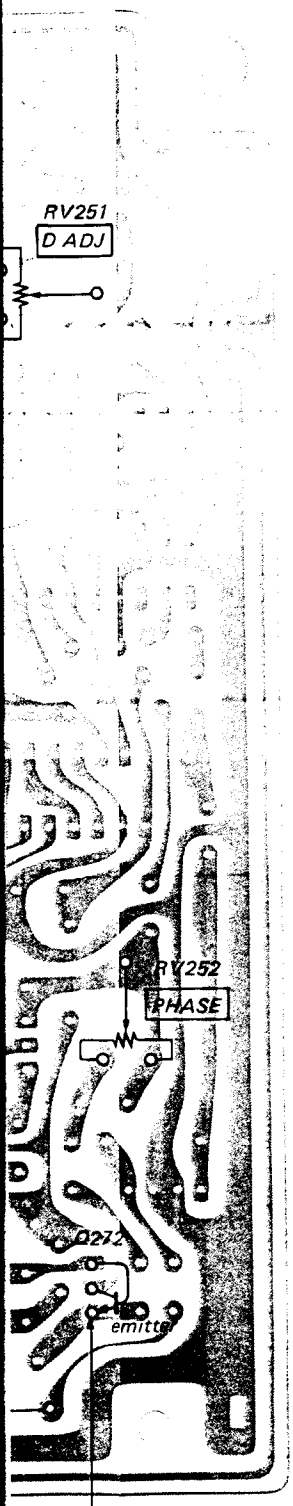


Fig. 3




T255
1
14
IC252
28
25
15
RV251
D ADJ
T251
T254
T253
6
3
1
BA-6
RV256
APC
— BA Board —
15
16
28
10μF/25V
IC253
100KΩ
14
13
T257
B.A.T.
RV255
KILLER
R378
RV253
ACC
L252
L253
Q272
emitter
RV264
C. LEVEL



SECAM ADJUSTMENT (ID)

1. Input the SECAM color bar.
2. Connect an digital multimeter to pin (25) of IC252.
3. Adjust T254 so that the digital multimeter reading is maximum.

SECAM ADJUSTMENT (B-Y)

1. Input the SECAM color bar.
2. Connect an oscilloscope to pin (25) of IC252.
3. Adjust T253 for the waveform at pin (25) of IC252 to becomes as Fig. 5.

Fig. 5

4. Connect an oscilloscope to pin (1) of BA-6 connector.
5. Adjust T255 for the waveform at connector BA-6 pin (1) to become as Fig. 6.

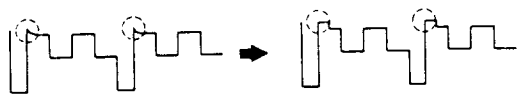
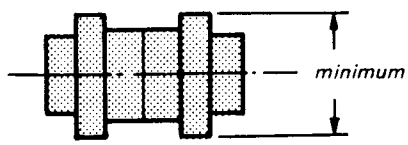


Fig. 6

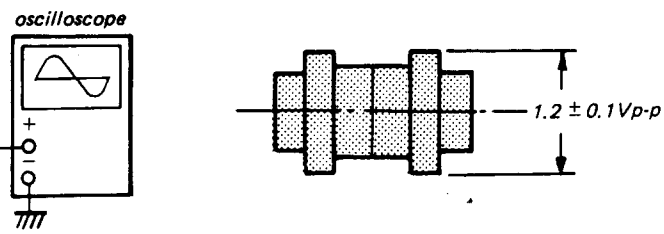
BAT ADJUSTMENT

1. Input a PAL color bar signal.
   PICTURE 80%
   BRIGHT 50%
   COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust T257 for minimum chroma component.



ACC ADJUSTMENT1

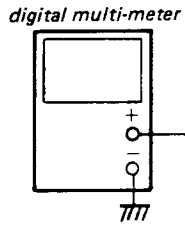
1. Input a PAL color bar signal.
   PICTURE 80%
   BRIGHT 50%
   COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust RV253 so that the signal component is 1.2 ± 0.1Vp-p.

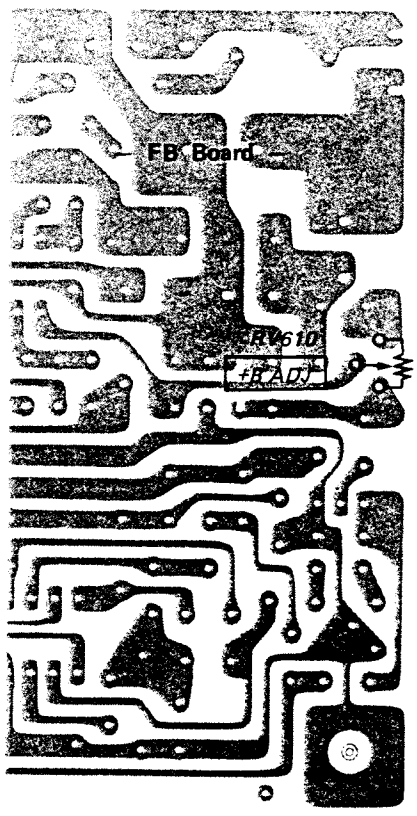


4-4. DA AND FB BOARDS ADJUSTMENTS

BLANKING OPERATION CHECK

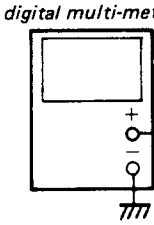
1. *Input the monoscope signal.*
2. *Connect an digital multimeter to TP61.*
3. *Confirm that the BLANKING circuit operate (the raster disappears) by adding 24.0 $^{+0}_{-0.1}$ V DC to TP61.*

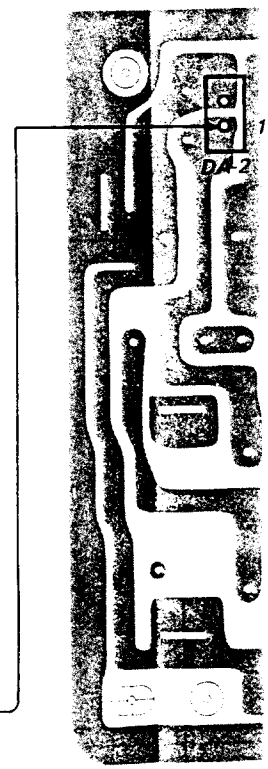


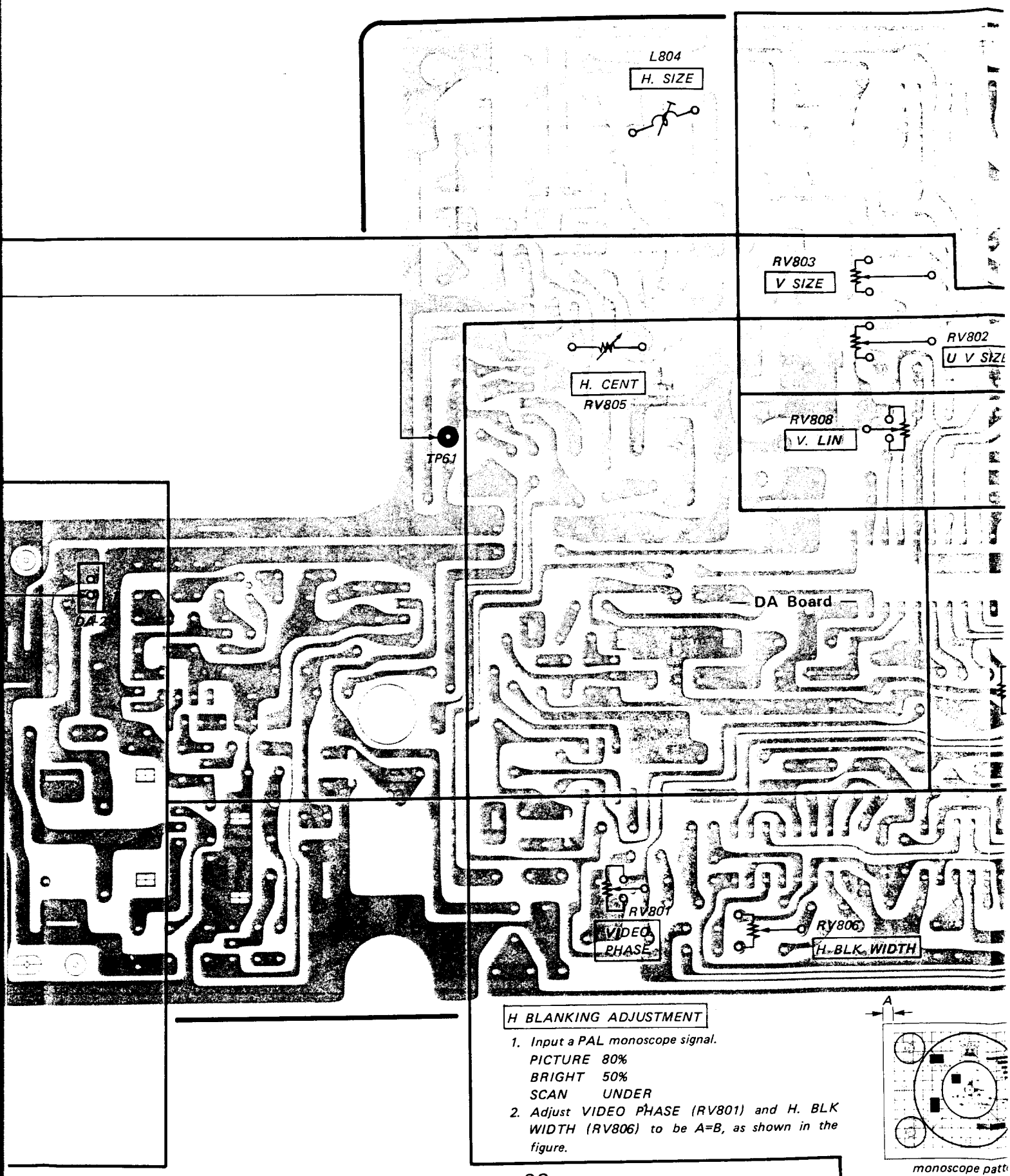


POWER SUPPLY OPERATION CHECK

1. *Input a monoscope signal.*
2. *Connect a digital voltmeter to connector DA-2 pin ①.*
3. *Adjust RV610 for 29.0 ± 0.2V DC.*



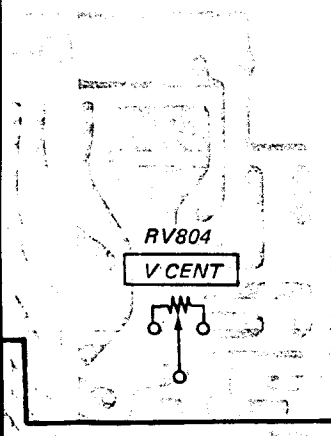




H BLANKING ADJUSTMENT

1. *Input a PAL monoscope signal.*
   PICTURE 80%
   BRIGHT 50%
   SCAN UNDER
2. *Adjust VIDEO PHASE (RV801) and H. BLK WIDTH (RV806) to be A=B, as shown in the figure.*

monoscope patt

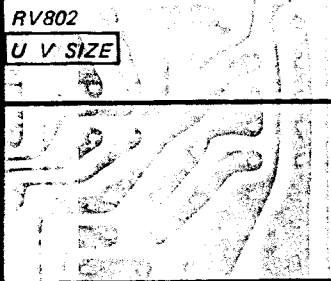


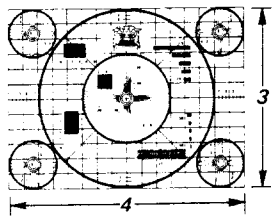
V. CENT ADJUSTMENT

1. Input a PAL monoscope signal.
   PICTURE 80%
   BRIGHT 50%
2. Adjust with V. CENT (RV804) so that picture is centered.

V. SIZE ADJUSTMENT

1. Input a PAL monoscope signal.
   PICTURE 80%
   BRIGHT 50%
2. Set the V. SIZE (RV803) to obtain a suitable picture.

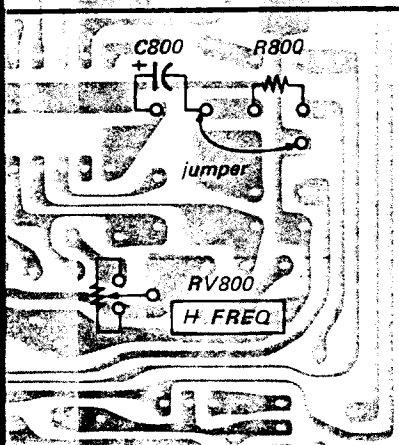


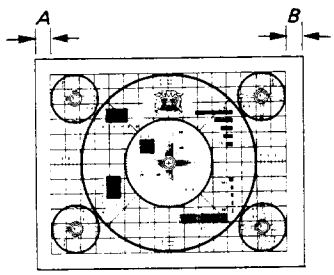


monoscope pattern

UNDER-SCAN V. SIZE ADJUSTMENT

1. Input a PAL monoscope signal.
   PICTURE . .80%
   BRIGHT. . .50%
   SCAN. . . . .UNDER
2. Adjust UN V. SIZE (RV802) so that the monoscope pattern of H. SIZE and V. SIZE is 4:3.





monoscope pattern

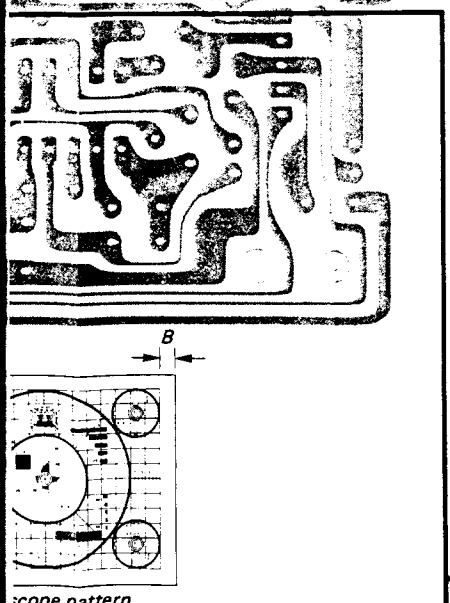
V. LINE ADJUSTMENT

1. Input a PAL monoscope signal.
   PICTURE 80%
   BRIGHT 50%
2. Adjust V. LINE (RV808) so that the monoscope pattern of A and B is same scale.

H. FREQ ADJUSTMENT

1. Input a PAL monoscope signal.
   PICTURE 80%
   BRIGHT 50%
2. Connect a jumper between C800 minus side and ground.
3. Adjust with H. FREQ (RV800) as shown in figure.

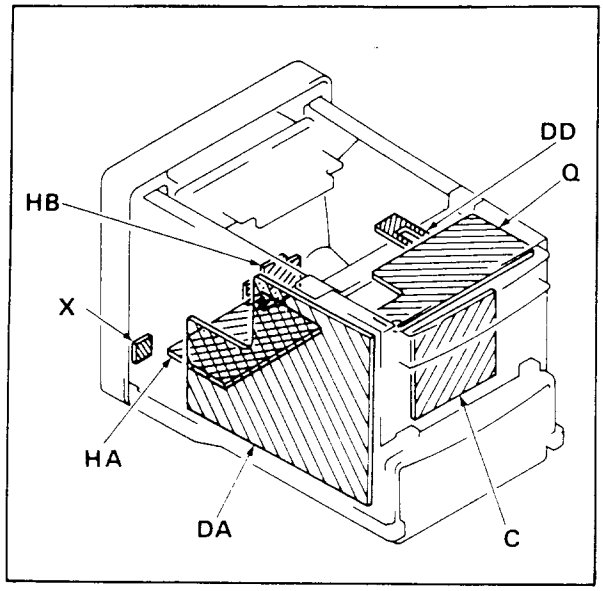
fo low fo correct fo high

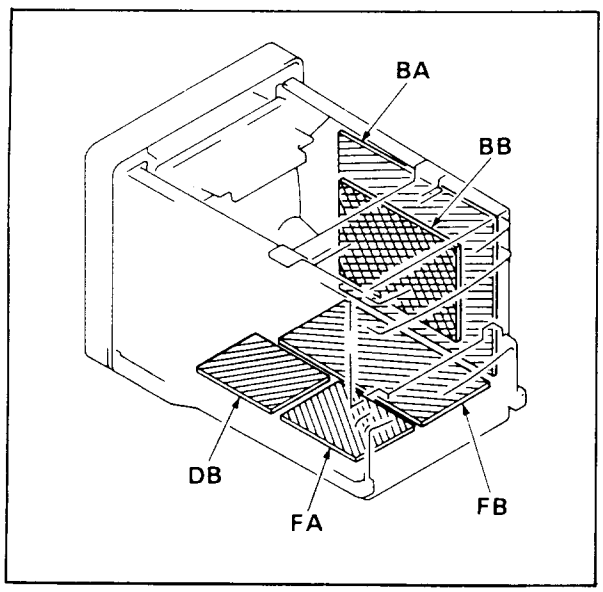


scope pattern

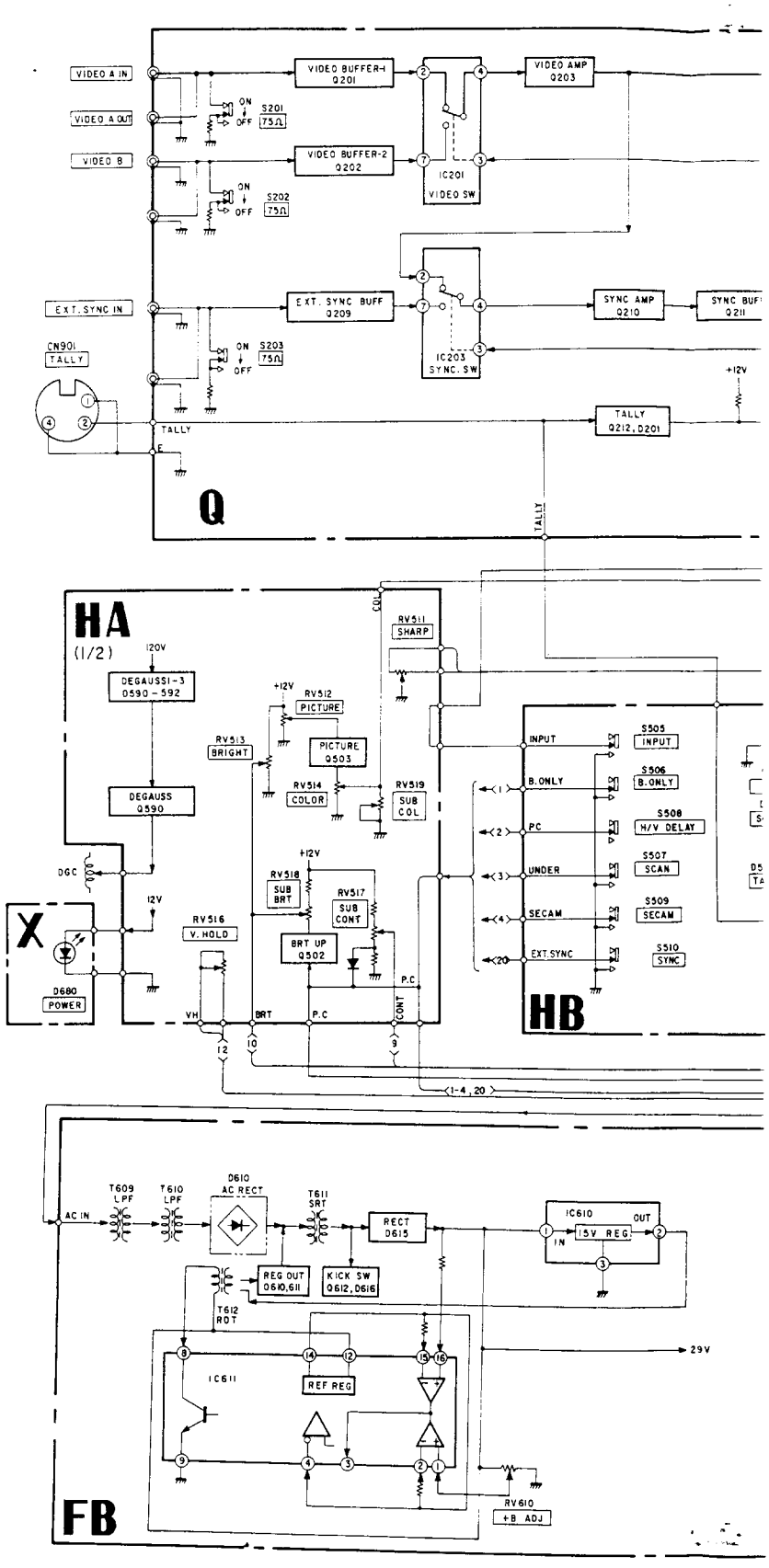
SECTION 5
DIAGRAMS

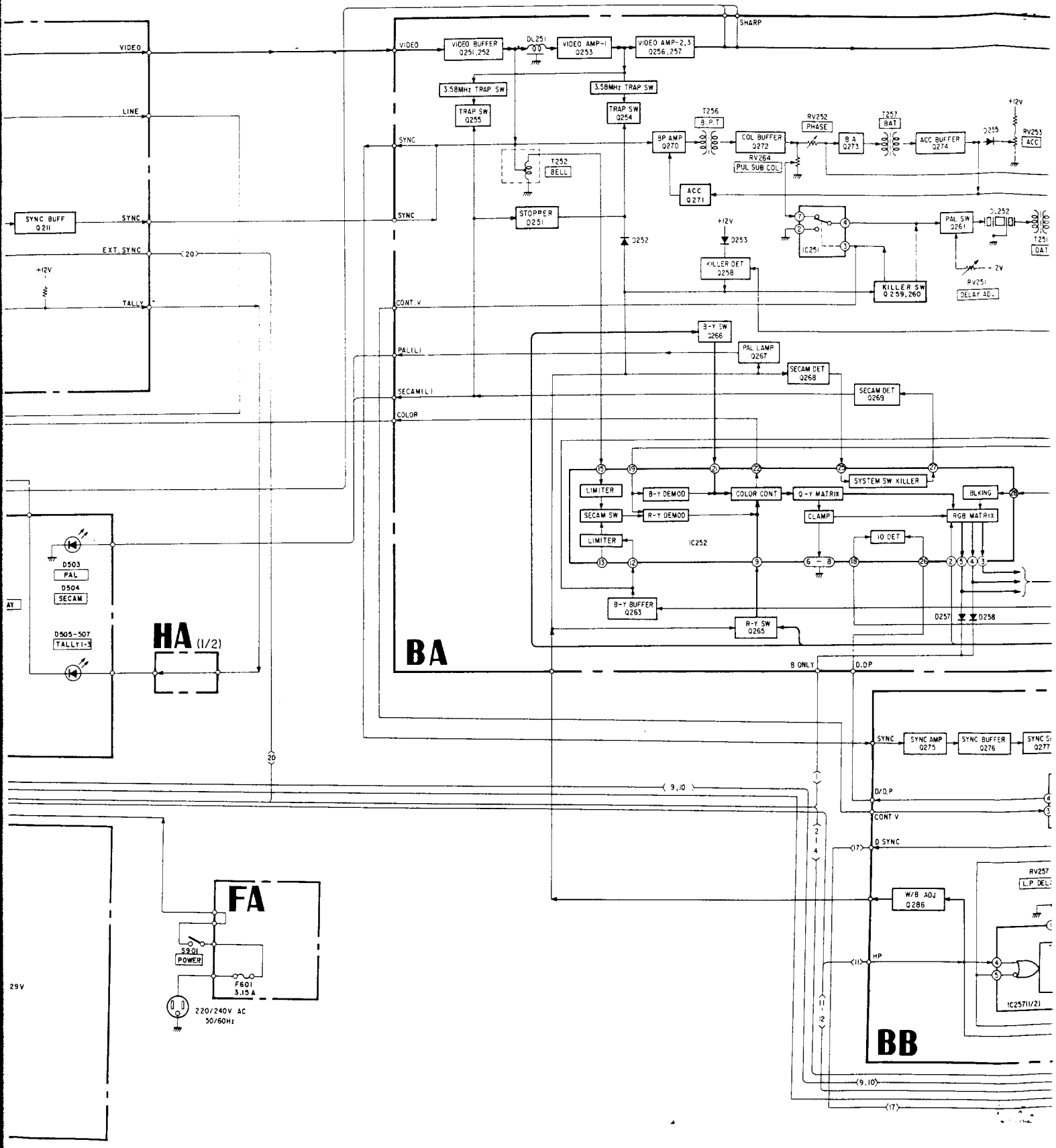
5-1. CIRCUIT BOARDS LOCATION

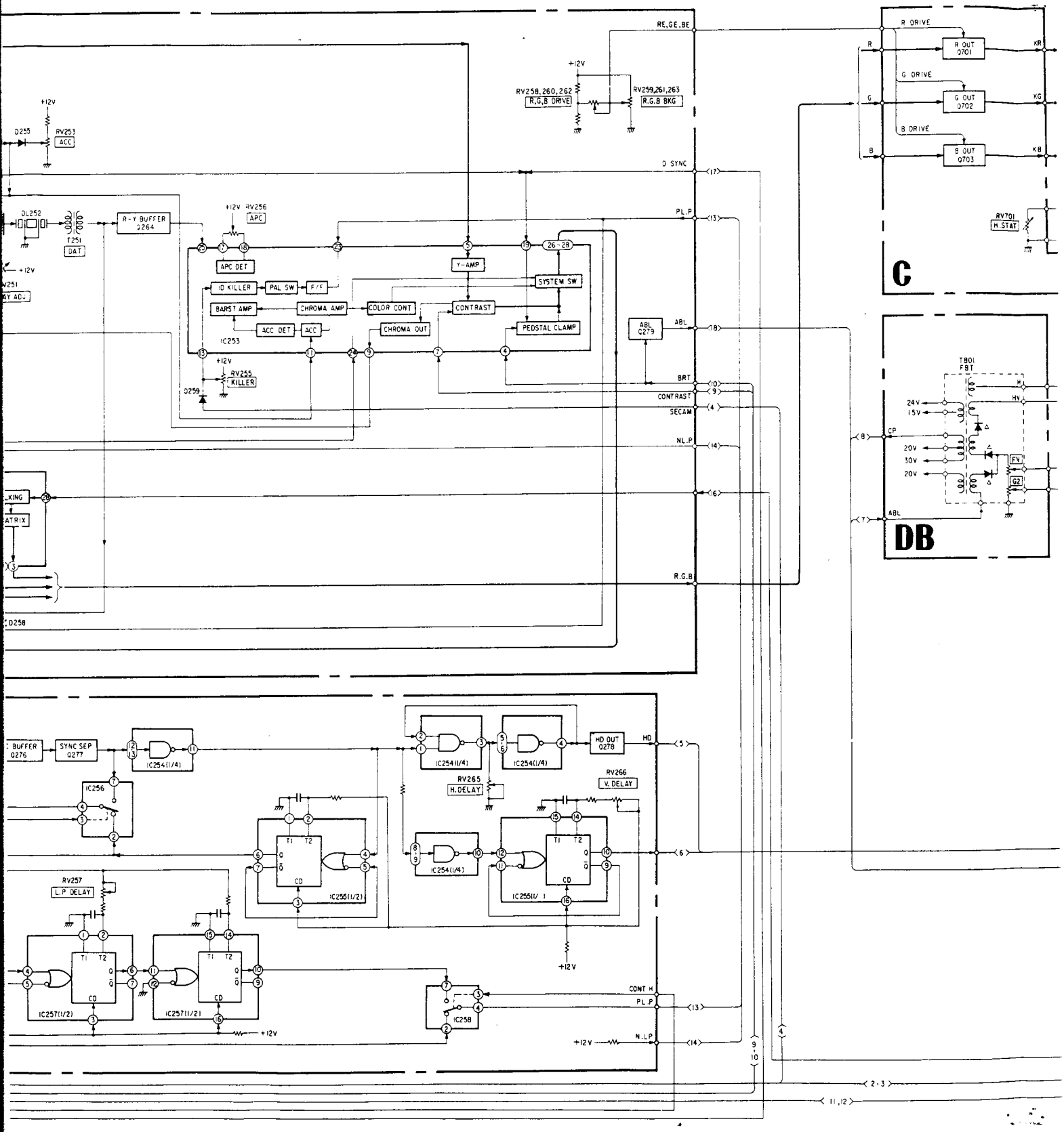


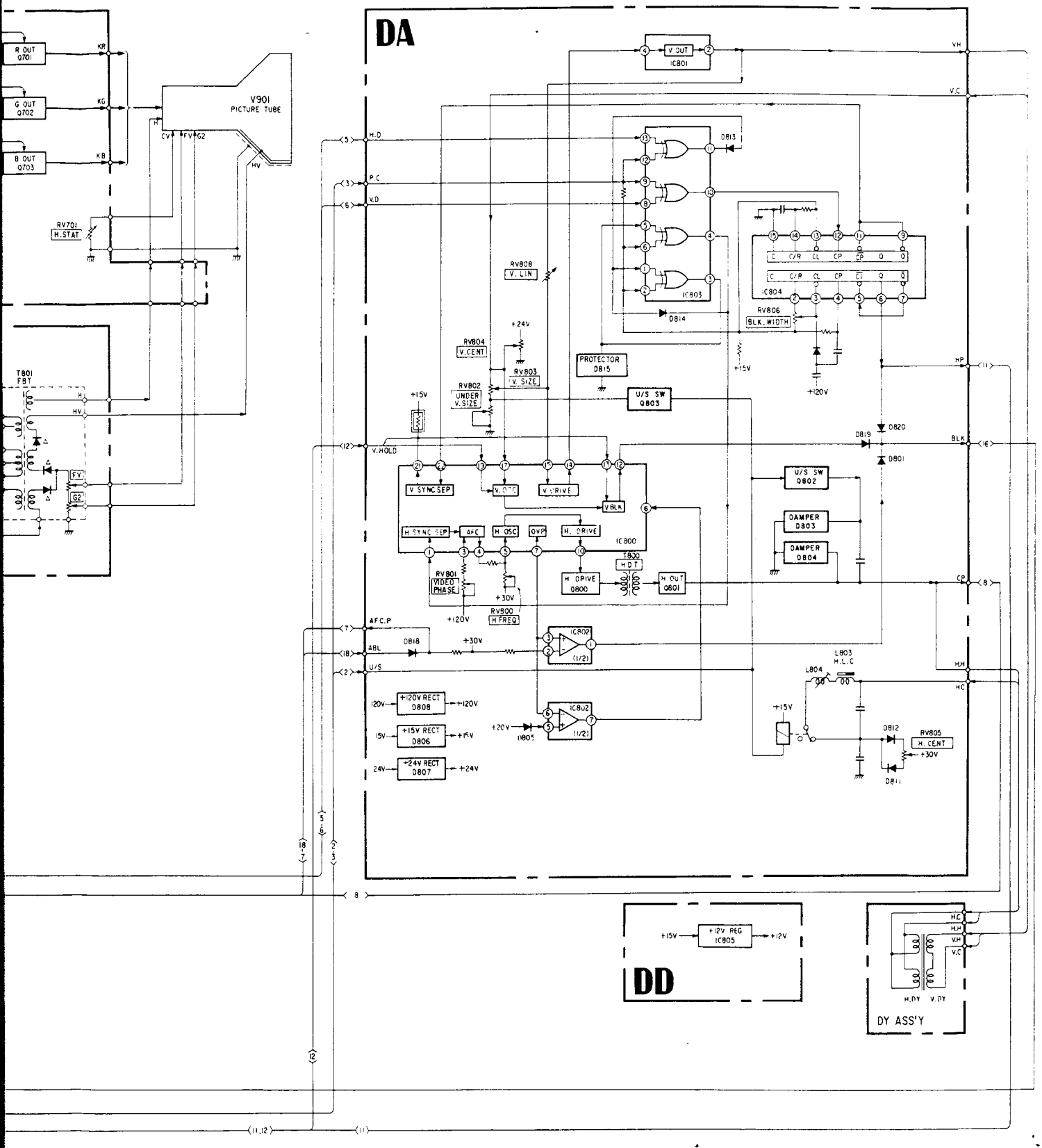


5-2. BLOCK DIAGRAM

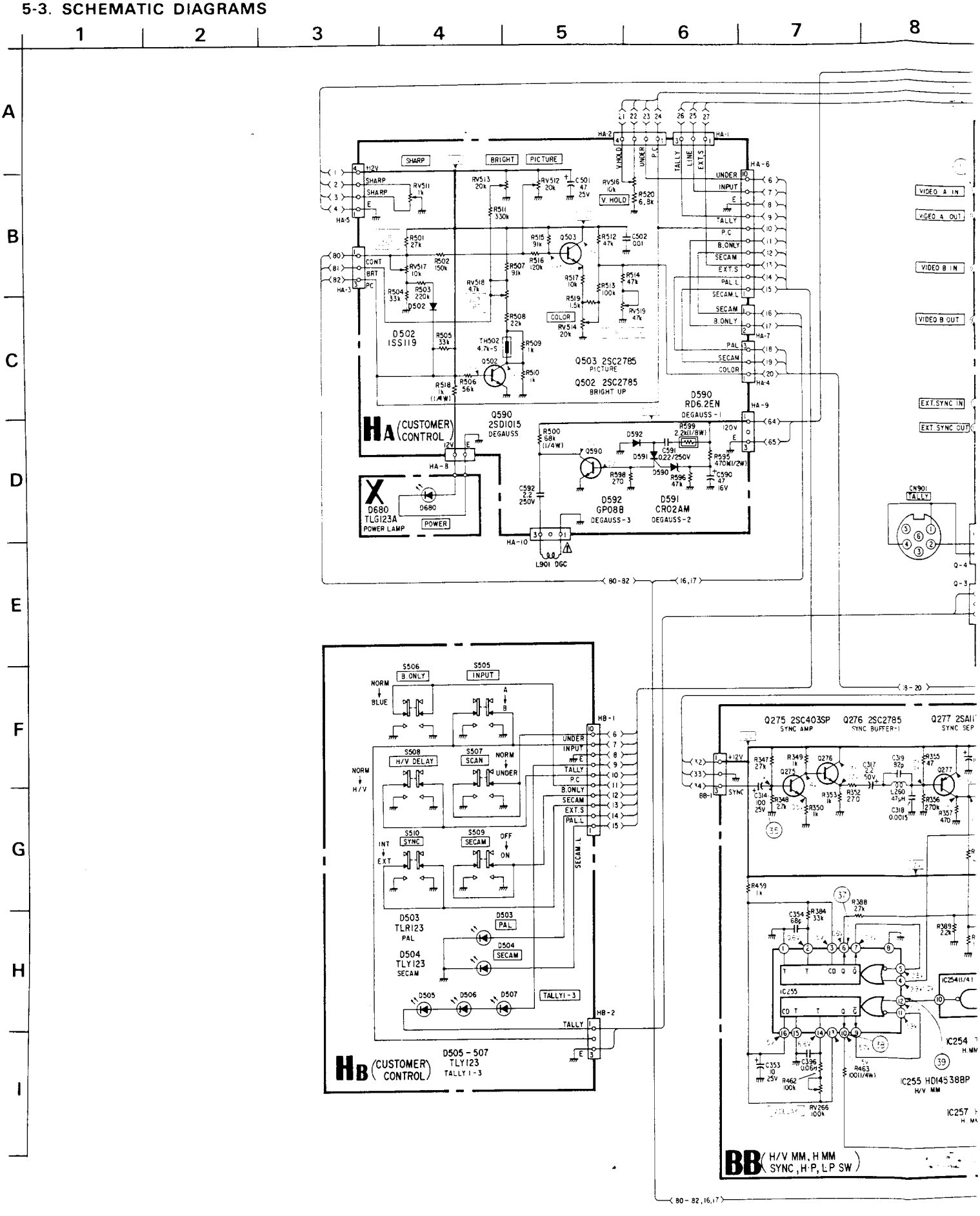


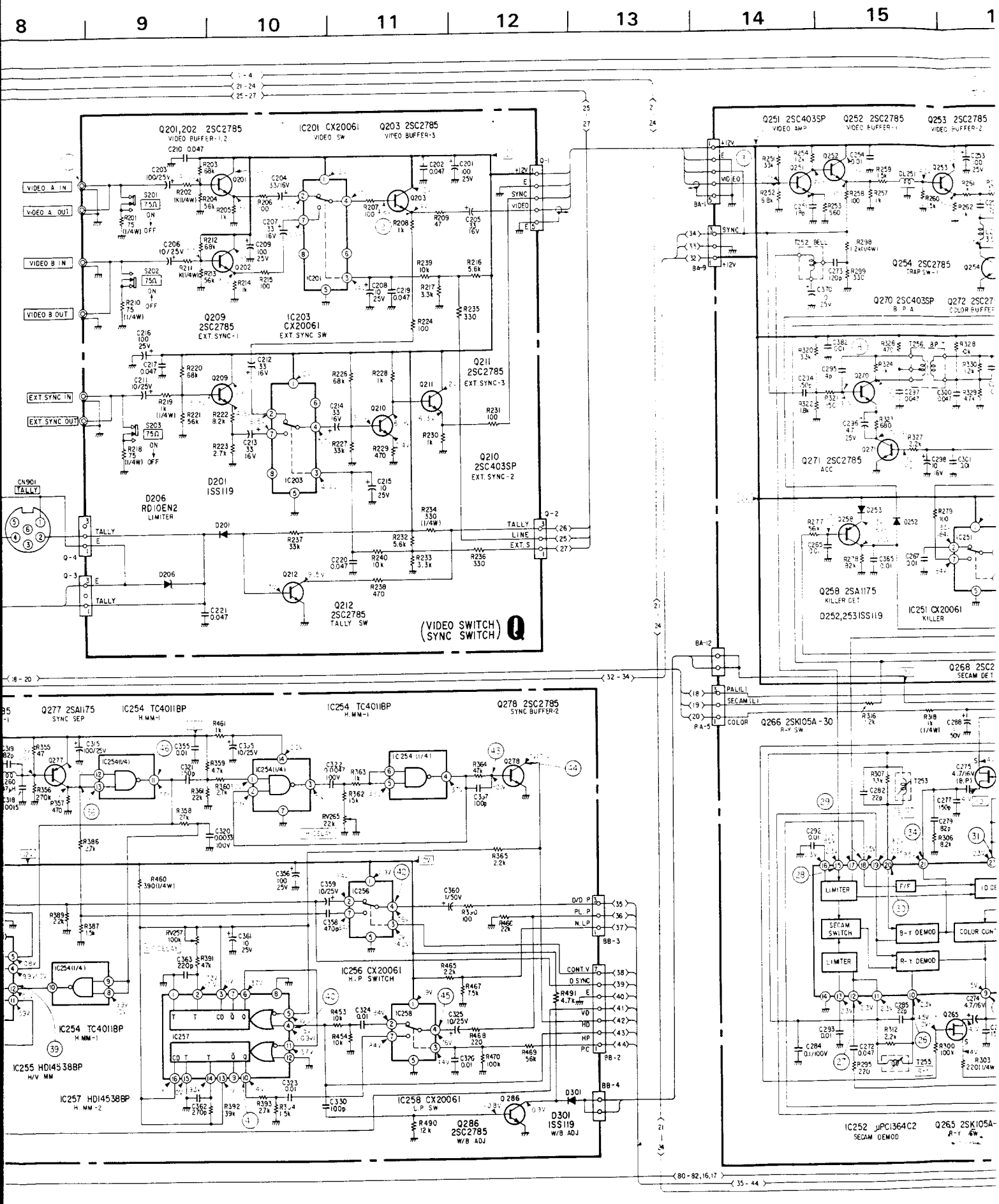

VIDEO
LINE
SYNC BUFF Q211
SYNC
EXT. SYNC
+12V
TALLY
SHARP
VIDEO BUFFER Q251,252
DL251 0.0
VIDEO AMP-1 Q253
VIDEO AMP-2,3 Q256,257
3.58MHz TRAP SW
TRAP SW Q255
TRAP SW Q254
T256 B.P.T
BP AMP Q270
COL BUFFER Q272
RV252 PHASE
B.A Q273
T257 BAT
ACC BUFFER Q274
D255
RV253 ACC
RV264 PUL SUB COL
ACC Q271
T252 BELL
STOPPER Q251
D252
D253
KILLER DET Q258
IC251
PAL SW Q261
DL252
T251 DAT
KILLER SW Q259,260
RV251 DELAY 3D
CONT V
PALI(L)
SECAMI(L)
COLOR
B-Y SW Q266
PAL LAMP Q267
SECAM DET Q268
SECAM DET Q269
LIMITER
B-Y DEMOD
COLOR CONT
Q-Y MATRIX
SYSTEM SW KILLER
BLKING
SECAM SW
R-Y DEMOD
CLAMP
RGB MATRIX
LIMITER
IC252
ID DET
B-Y BUFFER Q263
R-Y SW Q265
D257
D258
D503 PAL
D504 SECAM
D505-507 TALLY1-3
HA (1/2)
BA
B ONLY
D.DP
SYNC
SYNC AMP Q275
SYNC BUFFER Q276
D/D.P
CONT V
D SYNC
W/B ADJ Q286
HP
RV257
IC257(1/2)
BB
FA
S901 POWER
F601 3.15A
220/240V AC 50/60Hz
29V
20
9,10
17
11
12
2
1
4

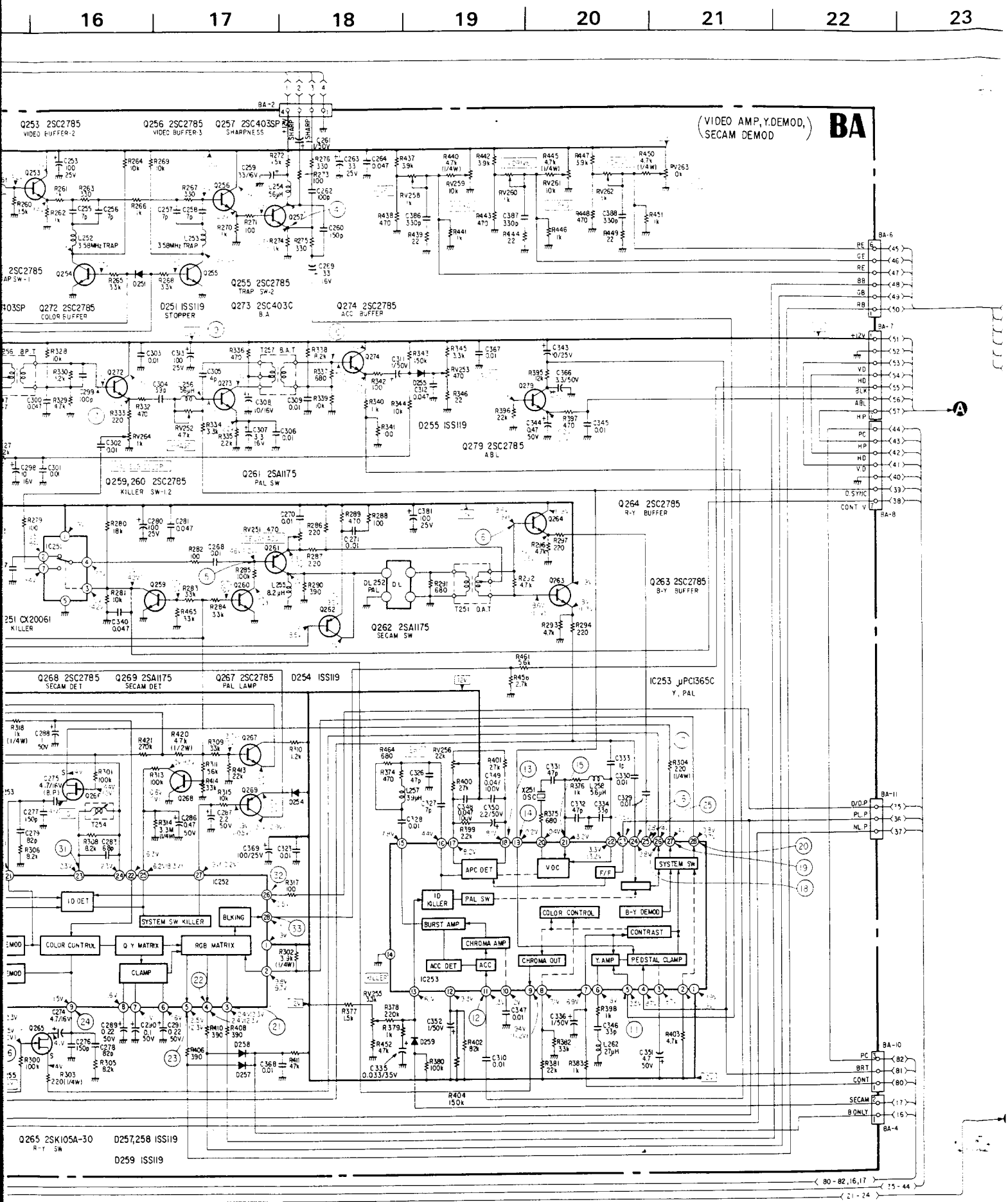

RE,GE,BE
+12V
RV258,260,262
R,G,B DRIVE
RV259,261,263
R,G,B BKG
R DRIVE
G DRIVE
B DRIVE
R OUT Q701
G OUT Q702
B OUT Q703
KR
KG
KB
RV701
H.STAT
C
D SYNC
P.L.P
D255
RV253
ACC
DL252
T251
DAT
R-Y BUFFER Q264
RV256
APC
APC DET
Y-AMP
26-28
ID KILLER
PAL SW
F/F
SYSTEM SW
BURST AMP
CHROMA AMP
COLOR CONT
CONTRAST
ACC DET
ACC
CHROMA OUT
PEDSTAL CLAMP
IC253
RV255
KILLER
D259
ABL Q279
ABL
BRT
CONTRAST
SECAM
N.L.P
R.G.B
D258
T801
FBT
24V
15V
20V
30V
CP
FV
G2
HV
DB
BUFFER Q276
SYNC SEP Q277
IC254(I/4)
IC256
HD OUT Q278
HD
RV265
H.DELAY
RV266
V.DELAY
IC255(1/2)
RV257
L.P DELAY
IC257(1/2)
IC258
CONT H
P.L.P
N.L.P
+12V

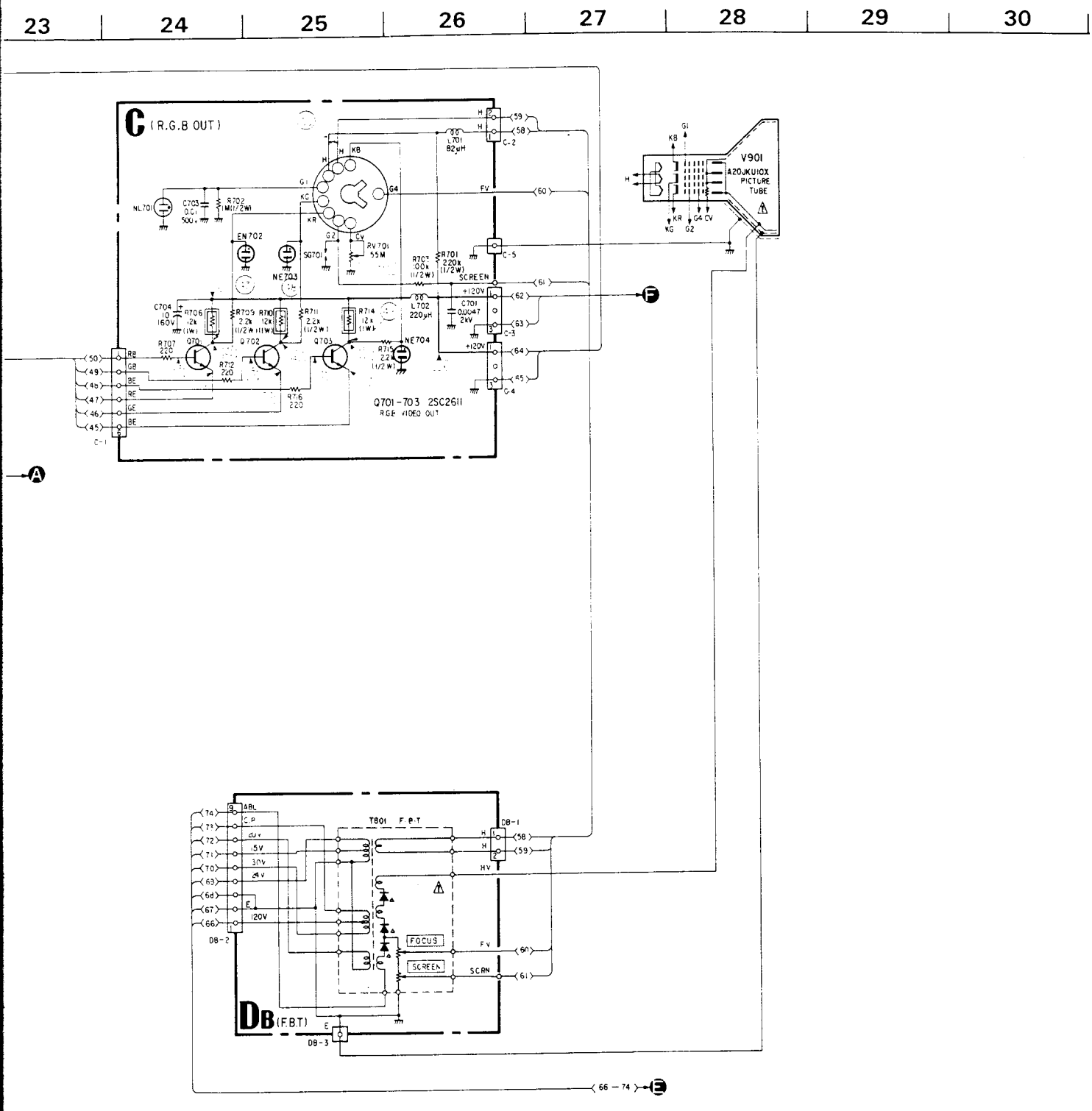

DA
R OUT Q701
G OUT Q702
B OUT Q703
KR
KG
KB
V901
PICTURE TUBE
CV
FV
G2
H
HV
RV701
H.STAT
T801
FBT
V.OUT IC801
H.D
P.C
V.D
V.HOLD
RV808
V.LIN
RV804
V.CENT
RV803
V.SIZE
RV802
UNDER V.SIZE
+24V
+15V
PROTECTOR D815
U/S SW Q803
D813
D814
IC803
IC804
RV806
BLK.WIDTH
+120V
D819
D820
D801
U/S SW Q802
DAMPER D803
DAMPER D804
V.SYNC SEP
V.OSC
V.DRIVE
V.BLK
H.SYNC SEP
AFC
H.OSC
O.V.P
H.DRIVE
IC800
T800
H.OT
H.DRIVE Q800
H.OUT Q801
RV801
VIDEO PHASE
RV800
H.FREQ
+30V
+120V
AFC.P
ABL
U/S
D818
IC802
(1/2)
L803
H.L.C
L804
D812
RV805
H.CENT
D811
120V
+120V RECT D808
+120V
15V
+15V RECT D806
+15V
24V
+24V RECT D807
+24V
D805
HP
BLK
CP
H.H
H.C
V.H
V.C
DD
+15V
+12V REG IC805
+12V
H.DY
V.DY
DY ASS'Y

5-3. SCHEMATIC DIAGRAMS




8
9
10
11
12
13
14
15
Q201,202 2SC2785
VIDEO BUFFER-1,2
IC201 CX20061
VIDEO SW
Q203 2SC2785
VIDEO BUFFER-3
VIDEO A IN
VIDEO A OUT
VIDEO B IN
VIDEO B OUT
EXT SYNC IN
EXT SYNC OUT
Q209
2SC2785
EXT.SYNC-1
IC203
CX20061
EXT.SYNC SW
Q211
2SC2785
EXT.SYNC-3
Q210
2SC403SP
EXT.SYNC-2
D201
1SS119
D206
RD10EN2
LIMITER
CN901
TALLY
Q212
2SC2785
TALLY SW
(VIDEO SWITCH)
(SYNC SWITCH)
Q251 2SC403SP
VIDEO AMP
Q252 2SC2785
VIDEO BUFFER-1
Q253 2SC2785
VIDEO BUFFER-2
Q254 2SC2785
TRAP SW-1
Q270 2SC403SP
B.P.F
Q271 2SC2785
ACC
Q258 2SA1175
KILLER DET
D252,253 1SS119
IC251 CX20061
KILLER
Q268 2SC2
SECAM DET
Q266 2SK105A-30
R-Y SW
Q277 2SA1175
SYNC SEP
IC254 TC4011BP
H.MM-1
Q278 2SC2785
SYNC BUFFER-2
IC256 CX20061
H.P SWITCH
IC258 CX20061
L.P SW
Q286
2SC2785
W/B ADJ
D301
1SS119
W/B ADJ
IC255 HD14538BP
H/V MM
IC257 HD14538BP
H.MM-2
IC252 μPC1364C2
SECAM DEMOD
Q265 2SK105A-
LIMITER
F/F
SECAM SWITCH
B-Y DEMOD
R-Y DEMOD
COLOR CONT

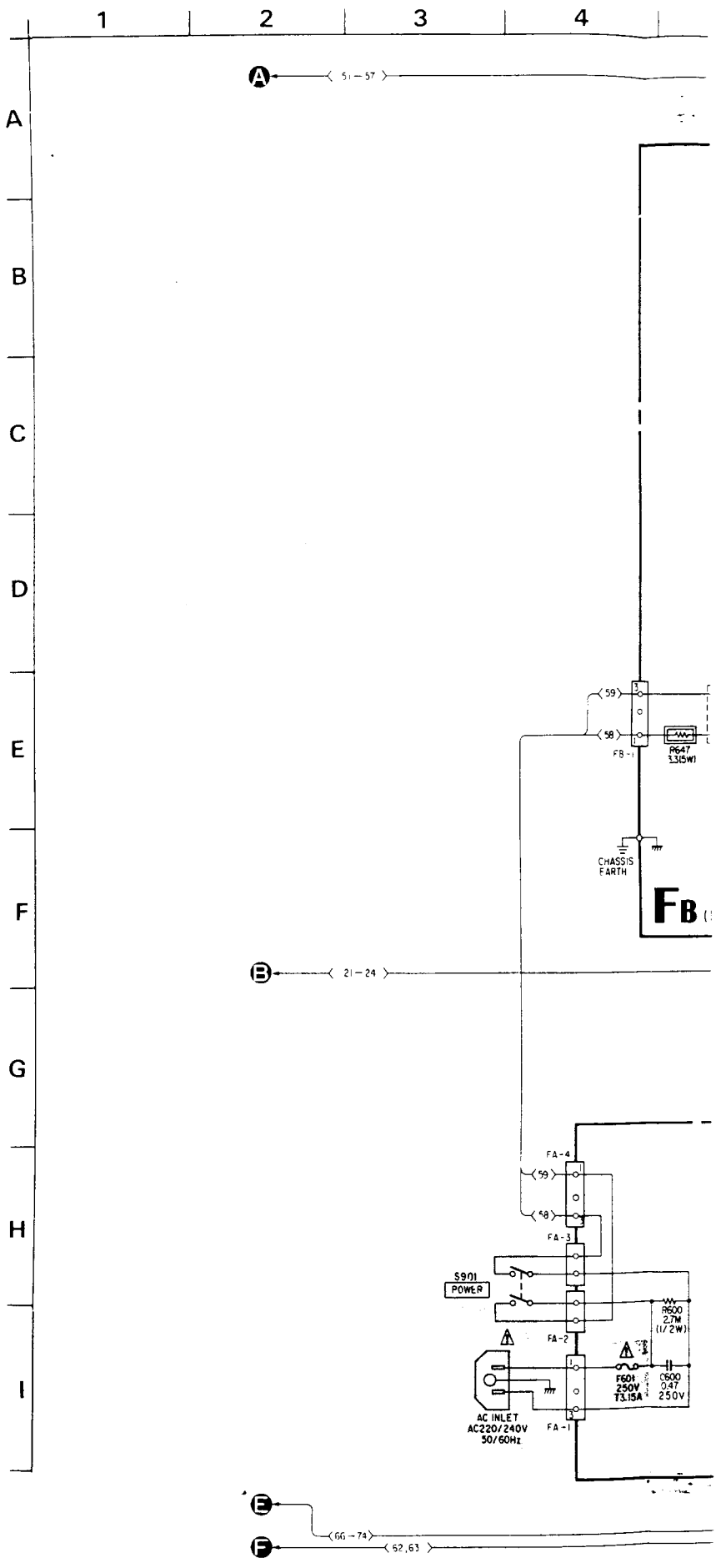

16
17
18
19
20
21
22
23
BA
(VIDEO AMP, Y.DEMOD, SECAM DEMOD)
Q253 2SC2785 VIDEO BUFFER-2
Q256 2SC2785 VIDEO BUFFER-3
Q257 2SC4035P SHARPNESS
Q272 2SC2785 COLOR BUFFER
Q255 2SC2785 TRAP SW-2
Q273 2SC4030 B.A
Q274 2SC2785 ACC BUFFER
D251 ISS119 STOPPER
Q279 2SC2785 ABL
D255 ISS119
Q261 2SA1175 PAL SW
Q259,260 2SC2785 KILLER SW-1,2
Q264 2SC2785 R-Y BUFFER
Q263 2SC2785 B-Y BUFFER
Q262 2SA1175 SECAM SW
Q268 2SC2785 SECAM DET
Q269 2SA1175 SECAM DET
Q267 2SC2785 PAL LAMP
D254 ISS119
IC253 μPC1365C Y, PAL
Q265 2SK105A-30 R-Y SW
D257,258 ISS119
D259 ISS119
APC DET
VOC
F/F
SYSTEM SW
ID DET
ID KILLER
PAL SW
SYSTEM SW KILLER
BLKING
COLOR CONTROL
B-Y DEMOD
BURST AMP
CONTRAST
CHROMA AMP
ACC DET
ACC
CHROMA OUT
Y. AMP
PEDSTAL CLAMP
Q-Y MATRIX
RGB MATRIX
CLAMP
BA-2
BA-6
BA-7
BA-8
BA-11
BA-10
BA-4
RE
GE
RE
BB
GB
RB
+12V
VD
HD
BLK
ABL
HP
PC
HP
HD
V.D
D.SYNC
CONT V
D/D.P
PL.P
NL.P
PC
BRT
CONT
SECAM
B ONLY
80 - 82, 16, 17
25 - 44
21 - 24

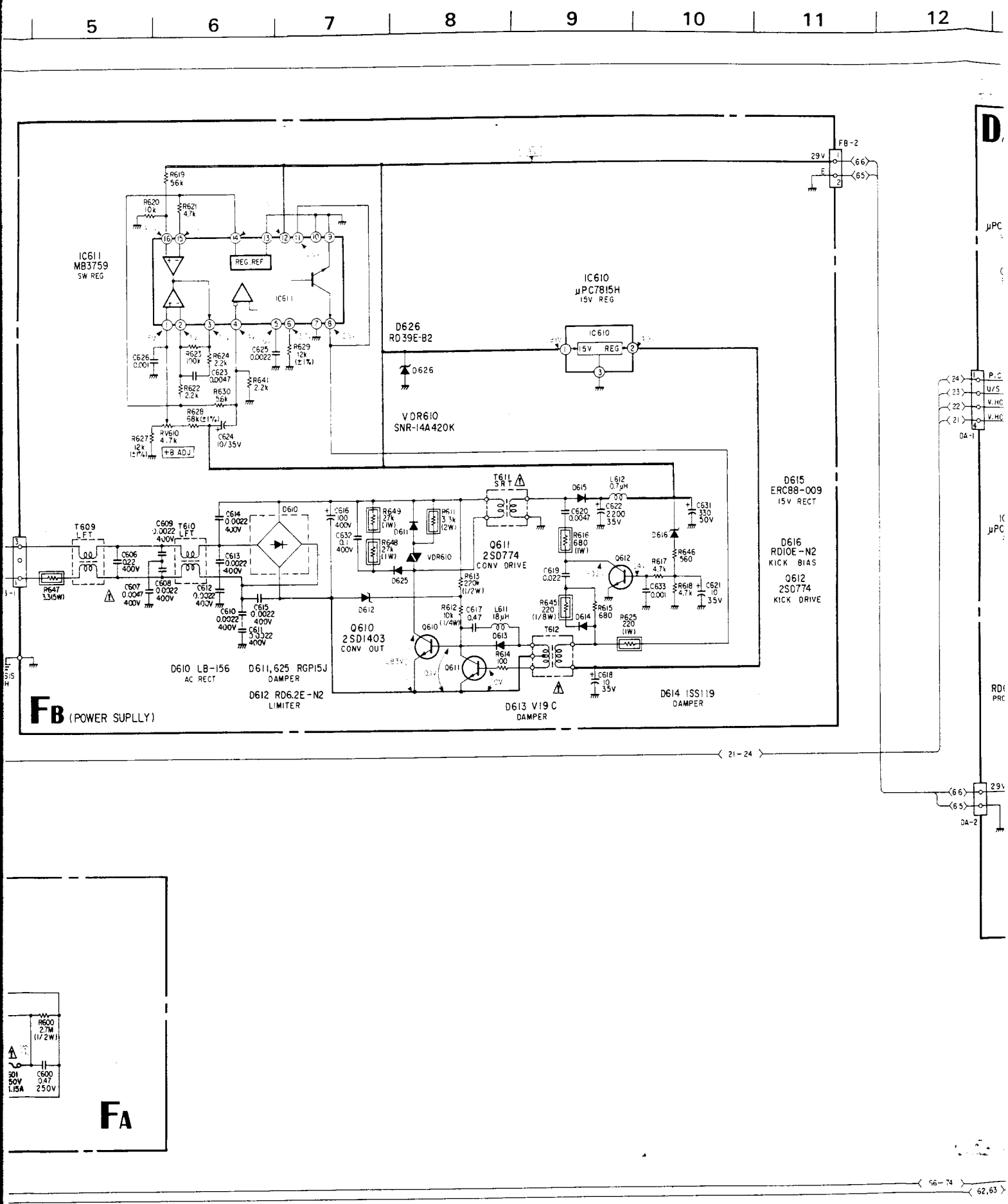

23
24
25
26
27
28
29
30
C (R.G.B OUT)
V901
A20JKU10X
PICTURE
TUBE
Q701-703 2SC2611
RGB VIDEO OUT
T801 F.B.T
DB (F.B.T)
FOCUS
SCREEN
SCRN
ABL
120V
66 - 74

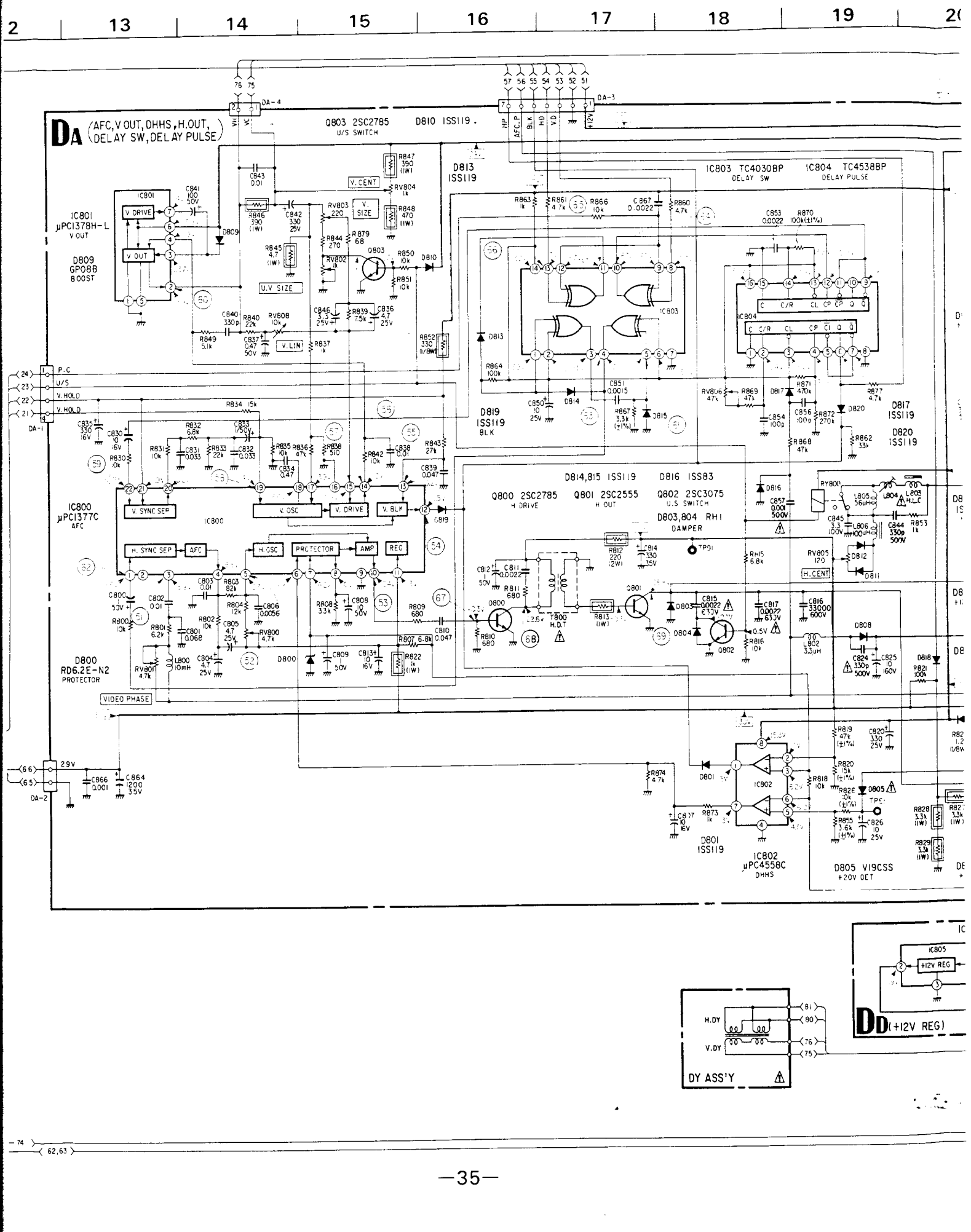
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

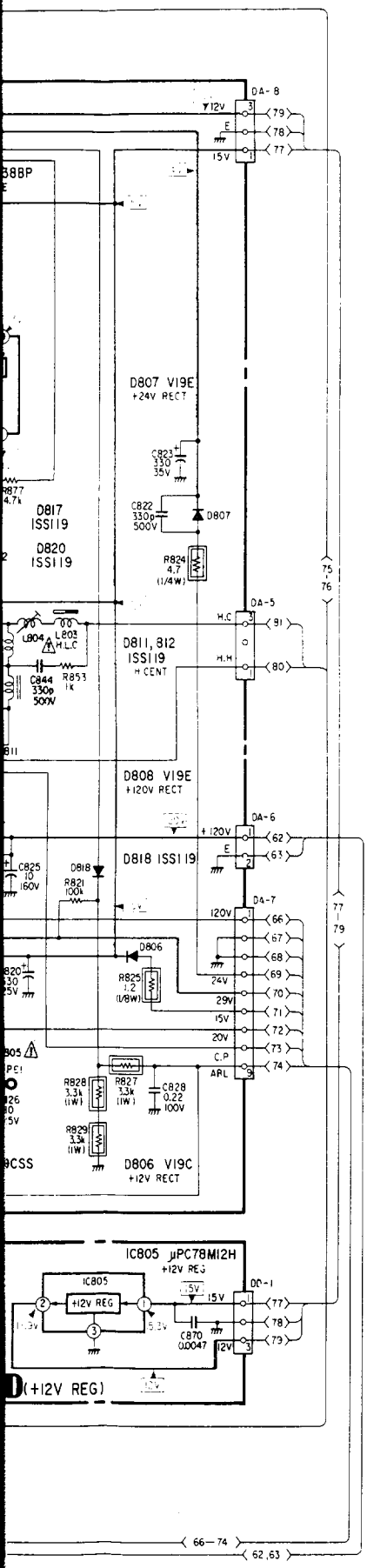
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6W unless otherwise noted. k : 1000Ω, M : 1000kΩ
- : Nonflammable resistor
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : Fusible resistor
- △ : internal component.
- : panel designation.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10MΩ digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- : adjustment for repair.
- Readings are taken with a color-bar signal input.
  no mark : with PAL color-bar signal received.
  ( ) : with SECAM color-bar signal received.
- Circled numbers (1 – 69) are waveform references refer to waveform on page 37, 38.
- ———: B + bus.
- — — —: B – bus.
- ⊹ : Selected to yield optimum performance.



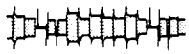
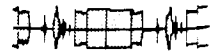
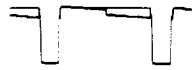
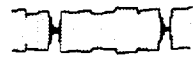
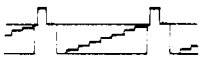
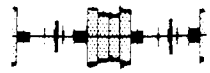
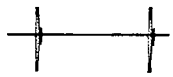
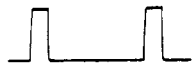
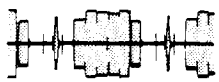
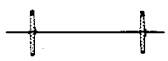
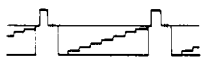
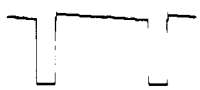
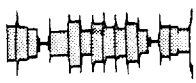
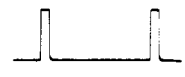

5
6
7
8
9
10
11
12
FB-2
29V
R619 56k
R620 10k
R621 4.7k
IC611 MB3759 SW REG
REG.REF
IC610 µPC7815H 15V REG
D626 RD39E-B2
VDR610 SNR-14A420K
R628 68k(±1%)
R627 12k (±1%)
RV610 4.7k
+B ADJ
C624 10/35V
T611 SRT
D615 ERC88-009 15V RECT
D616 RD10E-N2 KICK BIAS
Q612 2SD774 KICK DRIVE
Q611 2SD774 CONV DRIVE
Q610 2SD1403 CONV OUT
T609 LFT
T610 LFT
R647 3.3(5W)
D610 LB-156 AC RECT
D611,625 RGP15J DAMPER
D612 RD6.2E-N2 LIMITER
D613 V19C DAMPER
D614 1SS119 DAMPER
FB (POWER SUPLLY)
21-24
DA-1
DA-2
R600 2.7M (1/2W)
C600 0.47 250V
FA
56-74
62,63

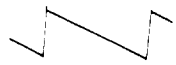
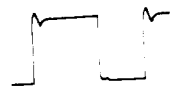
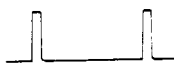
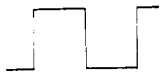
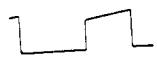
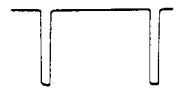
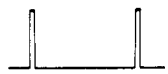
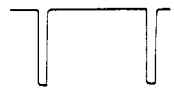
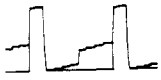
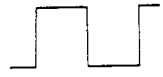
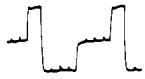
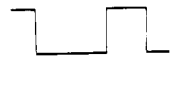

DA (AFC, V OUT, DHHS, H.OUT, DELAY SW, DELAY PULSE)
Q803 2SC2785 U/S SWITCH
D810 ISS119
D813 ISS119
IC803 TC4030BP DELAY SW
IC804 TC4538BP DELAY PULSE
IC801 μPC1378H-L V OUT
D809 GP08B BOOST
V. DRIVE
V OUT
V. CENT
V. SIZE
U.V SIZE
V. LIN
D819 ISS119 BLK
D817 ISS119
D820 ISS119
IC800 μPC1377C AFC
V. SYNC SEP
V. OSC
V. DRIVE
V. BLK
H. SYNC SEP
AFC
H. OSC
PROTECTOR
AMP
REG
D800 RD6.2E-N2 PROTECTOR
VIDEO PHASE
D814,815 ISS119
Q800 2SC2785 H DRIVE
Q801 2SC2555 H OUT
Q802 2SC3075 U.S SWITCH
D803,804 RH1 DAMPER
T800 H.OT
H.CENT
D801 ISS119
IC802 μPC4558C DHHS
D805 V19CSS +20V DET
DD (+12V REG)
IC805
+12V REG
DY ASS'Y
H.DY
V.DY
P.C
U/S
V.HOLD
V.HOLD
DA-1
DA-2
DA-3
DA-4

20 21 22 23 24 25 26



5-4. WAVEFORMS

① ② ③ PAL ① 0.85Vp-p(H) ② 0.8Vp-p(H) ③ 0.8Vp-p(H)	⑧ SECAM  0.95Vp-p(H)	⑭ PAL 3.7Vp-p(H)	㉑ SECAM 3.2Vp-p(H)	㉖ PAL  0.6Vp-p(H)	㉞ PA
① ② ③ SECAM ① 1Vp-p(H) ② 0.9Vp-p(H) ③ 0.9Vp-p(H)	⑨ PAL 3.2Vp-p(H)	⑮ 0.56Vp-p(4.38MHz)	㉒ PAL  3.2Vp-p(H)	㉖ SECAM  0.7Vp-p(H)	㉞ SE
④ PAL  0.65Vp-p(H)	⑨ SECAM 3.4Vp-p(H)	⑯ PAL 0.18Vp-p(H)	㉒ SECAM 3.2Vp-p(H)	㉗ PAL  0.18Vp-p(H)	㉟ PA
④ SECAM 0.7Vp-p(H)	⑩ PAL  8Vp-p(H)	⑰  3.1Vp-p(H)	㉓ PAL 3.2Vp-p(H)	㉘ PAL 0.12Vp-p(H)	㉟ SE
⑤ PAL  0.2Vp-p(H)	⑩ SECAM  6Vp-p(H)	⑱ PAL 0.46Vp-p(H)	㉓ SECAM 3.2Vp-p(H)	㉙ 3.2Vp-p(H)	㊱ ㊲
⑥ PAL 0.14Vp-p(H)	⑪ PAL  0.65Vp-p(H)	⑲ PAL 0.56Vp-p(H)	㉔ PAL 0.4Vp-p(H)	㉚ ㉛ PAL ㉚ 0.7Vp-p(H) ㉛ 0.6Vp-p(H)	㊳
⑦ PAL 0.75Vp-p(H)	⑪ SECAM 0.7Vp-p(H)	⑲ SECAM  2.1Vp-p(H)	㉔ SECAM 0.85Vp-p(H)	㉚ SECAM 1Vp-p(H)	㊴
⑦ SECAM  1Vp-p(H)	⑫ PAL 0.33Vp-p(H)	⑳ PAL 2.1Vp-p(H)	㉕ PAL 0.13Vp-p(H)	㉛ SECAM 0.8Vp-p(H)	㊵
⑧ PAL 0.7Vp-p(H)	⑬ PAL 0.38Vp-p(V)	㉑ PAL 3.2Vp-p(H)	㉕ SECAM 0.1Vp-p(H)	㉜ ㉝  ㉜ 3Vp-p(H) ㉝ 3.7Vp-p(H)	㊶

	(34) PAL 0.5Vp-p(H)	(42) PAL 3Vp-p(H)	(49) PAL 44Vp-p(H)	(57)  1.9Vp-p(V)	(66) 11Vp-p(H)
	(34) SECAM 1Vp-p(H)	(43) 5.6Vp-p(H)	(49) SECAM 44Vp-p(H)	(58) 3.8Vp-p(V)	(67) 2.3Vp-p(H)
	(35) PAL 0.8Vp-p(H)	(44) 11Vp-p(H)	(50) 17Vp-p(H)	(59) 0.27Vp-p(V)	(68)  40Vp-p(H)
	(35) SECAM 1.7Vp-p(H)	(45) 3.4Vp-p(H)	(51) 1.33Vp-p(H)	(60) 46Vp-p(V)	(69) 275Vp-p(H)
	(36) (37)  (36) 12Vp-p(H) (37) 10.5Vp-p(H)	(46) 11Vp-p(H)	(52) 4.4Vp-p(H)	(61) 12.3Vp-p(H)	
	(38)  11.5Vp-p(V)	(47) PAL 48Vp-p(H)	(53)  5.5Vp-p(H)	(62)  9Vp-p(H)	
	(39) 11Vp-p(V)	(47) SECAM 48Vp-p(H)	(54)  10.5Vp-p(V)	(63)  12.5Vp-p(H)	
	(40) 9.5Vp-p(H)	(48) PAL  50Vp-p(H)	(55) 6Vp-p(V)	(64)  13Vp-p(V)	
	(41) 10.5Vp-p(H)	(48) SECAM  50Vp-p(H)	(56) 3Vp-p(V)	(65)  12.5Vp-p(H)	

5-5. PRINTED WIRING BOARDS — Conductor Side —

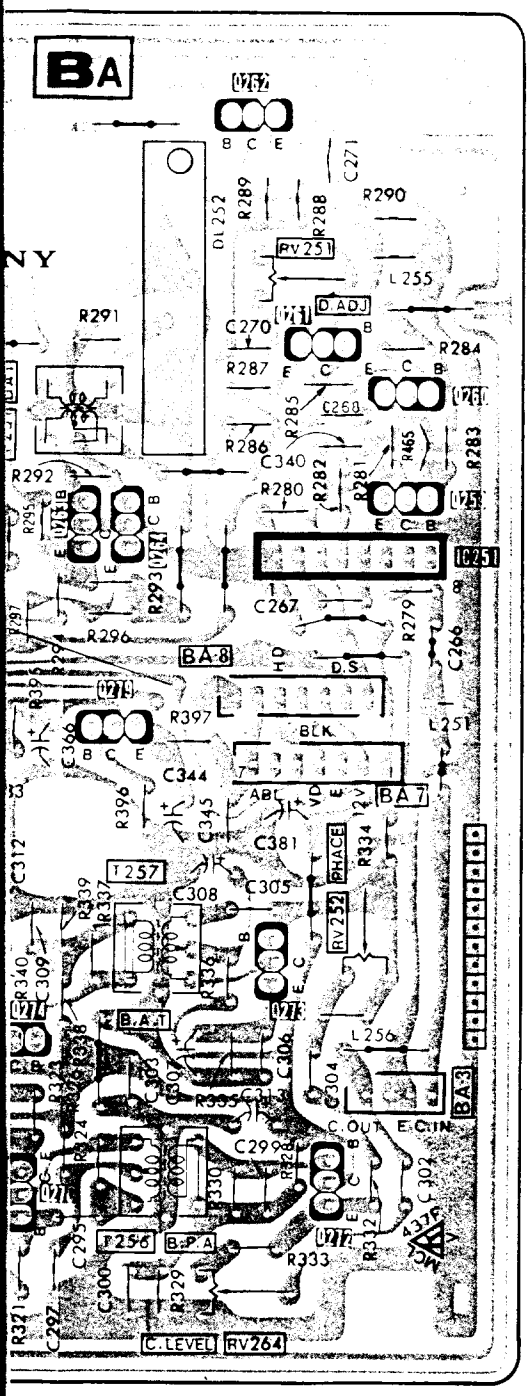
BA [VIDEO AMP, Y.DEMOD, SECAM DEMOD] **C** [R・G・B OUT]

— BA Board —

| | | |

— C Board —

262 261 260 259 263 264 279 273 IC251 272	Q IC
	D
RV251 RV252 RV264	ADJ



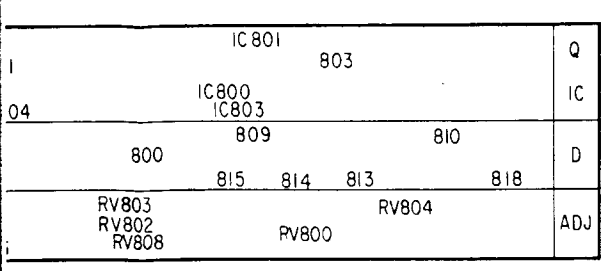
DA [AFC, V.OUT, DHHS, H.OUT, DELAY SW, DELAY PULSE] **DD** [+12V REG]

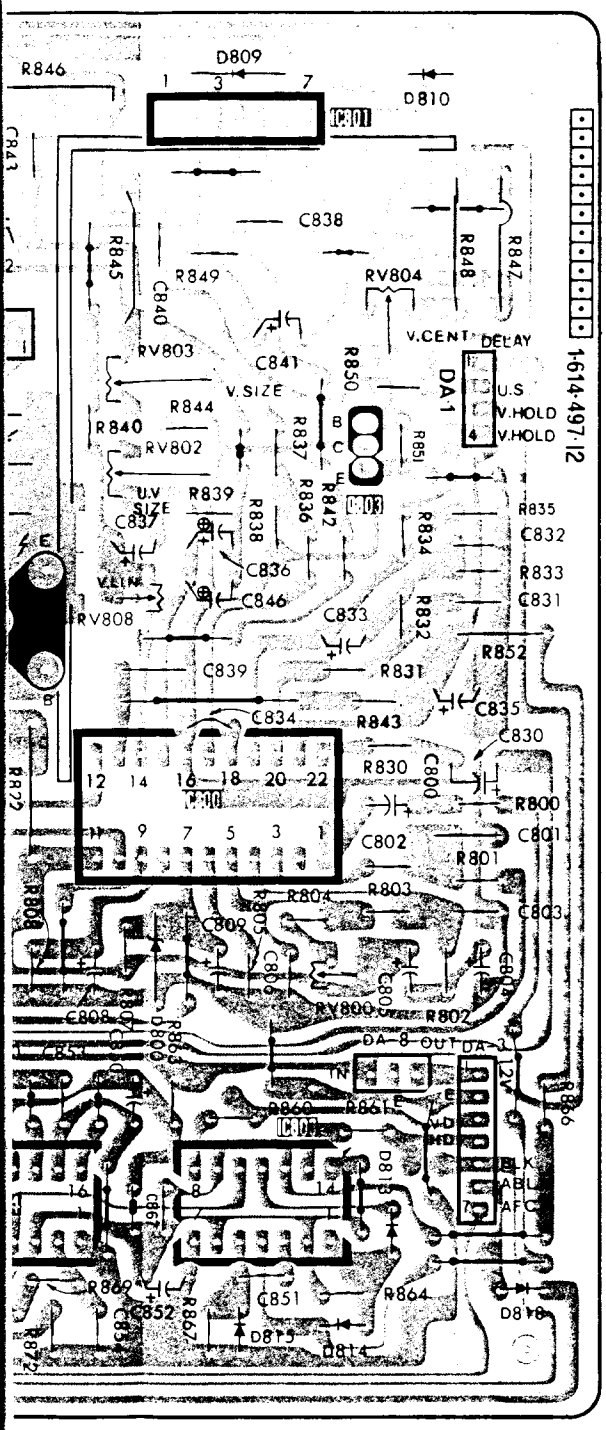
— DA Board —

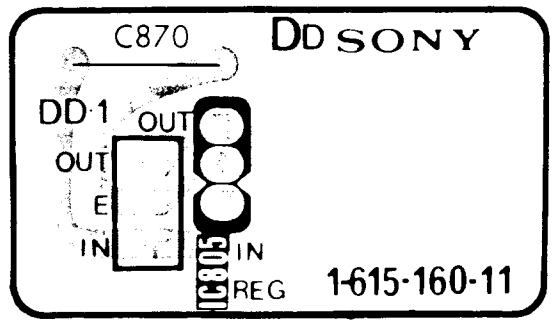
| | | |

8 9 10 11 12 13 14 15

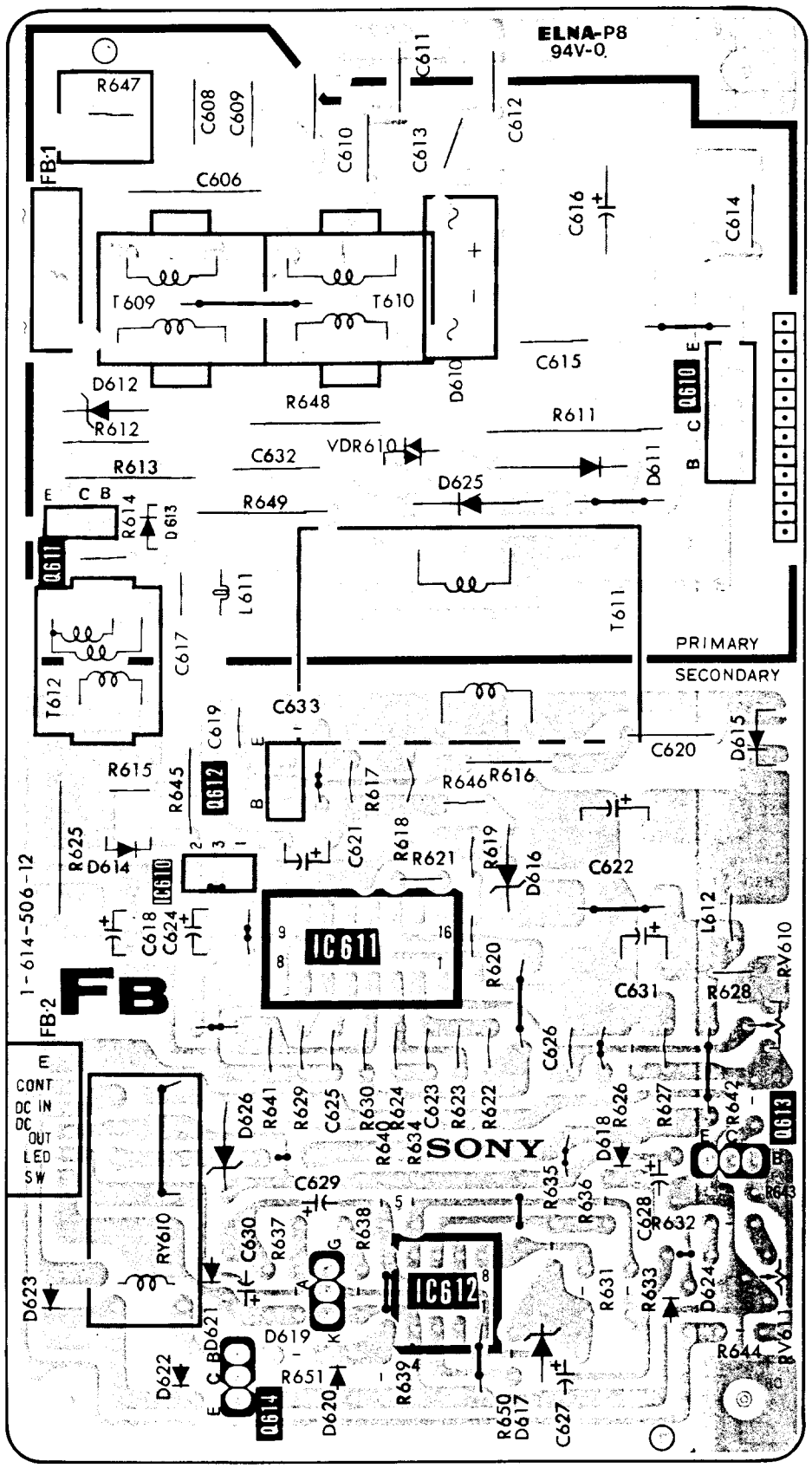
— DD Board —





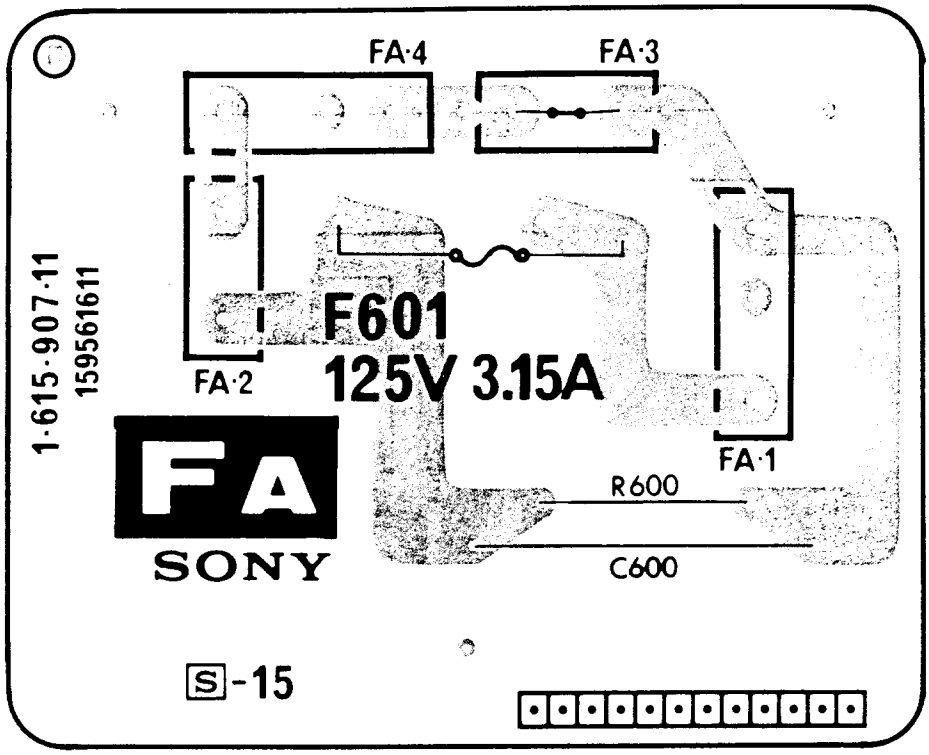


— FB Board —

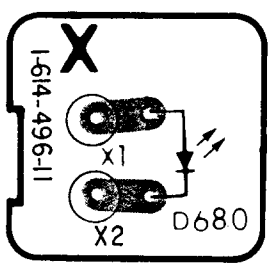

ELNA-P8
94V-0.
FB
FB:1
FB:2
1-614-506-12
PRIMARY
SECONDARY
IC611
IC612
SONY
CONT
DC IN
DC OUT
LED
SW
R647
C608
C609
C610
C611
C612
C613
C606
C616
C614
T609
T610
C615
D610
Q610
D612
R612
R648
R611
C632
VDR610
R613
D625
D611
R649
R614
D613
Q611
L611
T611
T612
C617
C619
C633
C620
D615
R615
R645
Q612
R617
R646
R616
R625
D614
Q610
C621
R618
R621
R619
D616
C622
C618
C624
L612
RV610
R620
C631
R628
C626
D626
R641
R629
C625
R630
R624
C623
R623
R622
R627
R642
Q613
D618
R626
C629
R635
R636
C628
R632
R643
C630
R637
R638
R631
R633
D624
RY610
D623
D621
D619
R644
RV611
D622
R651
R639
D620
R650
D617
C627
Q614

8 9 10 11 12 13 14 15

– FA Board –

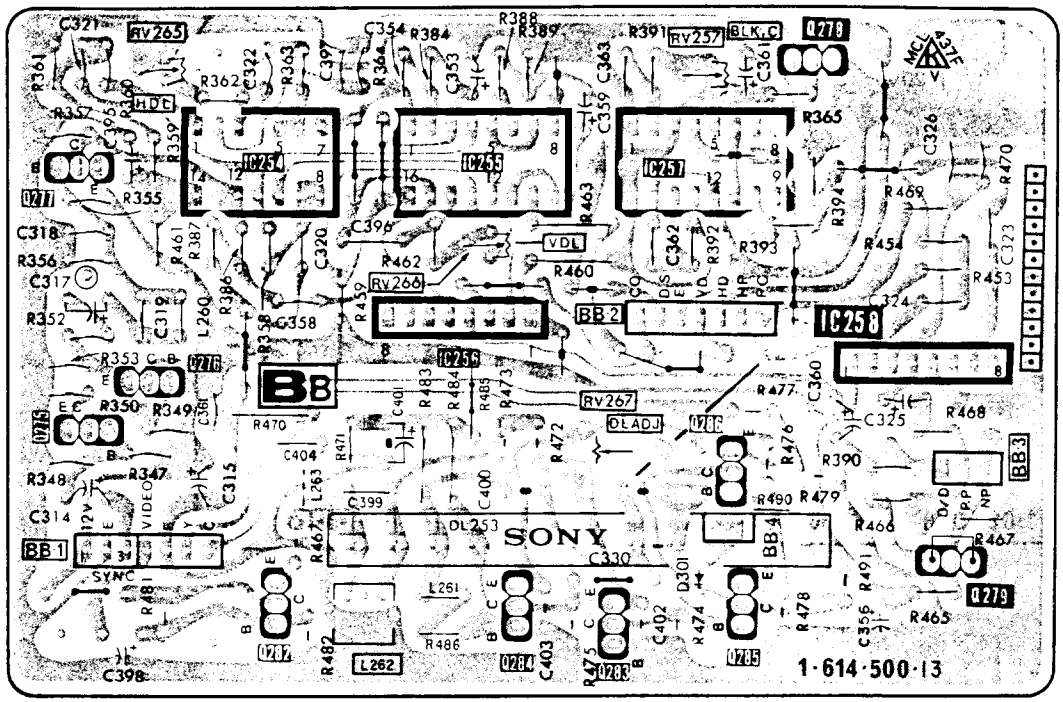


— X Board —

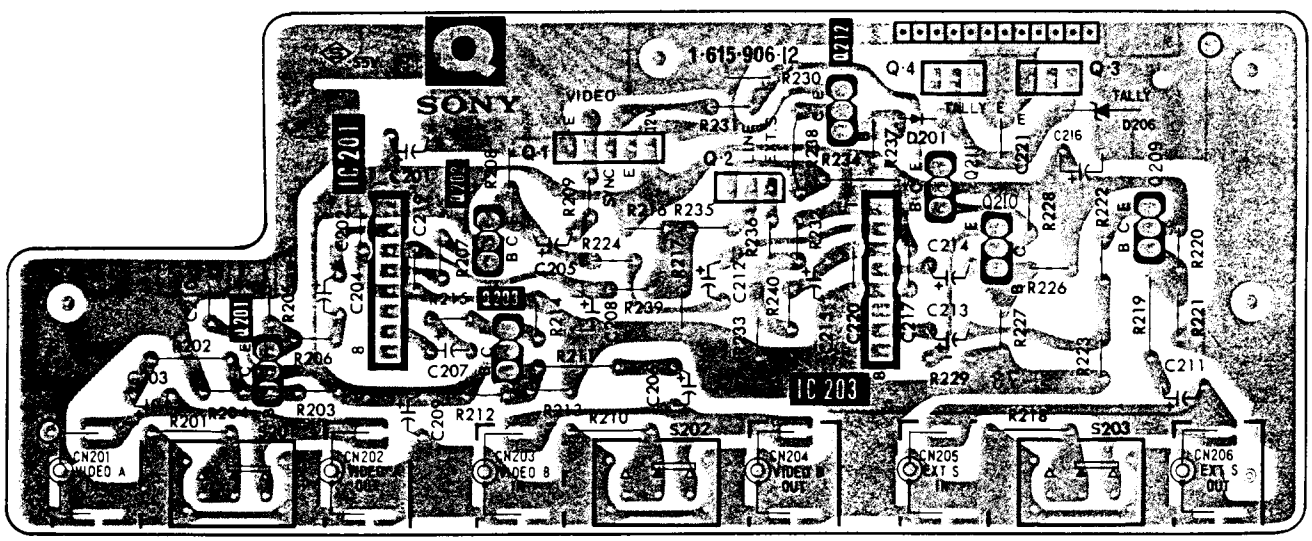


BB [H/V MM, H MM, SYNC, H • P, L • P SW] **Q** [VIDEO SWITCH, SYNC SWITCH]

— BB Board —



— Q Board —

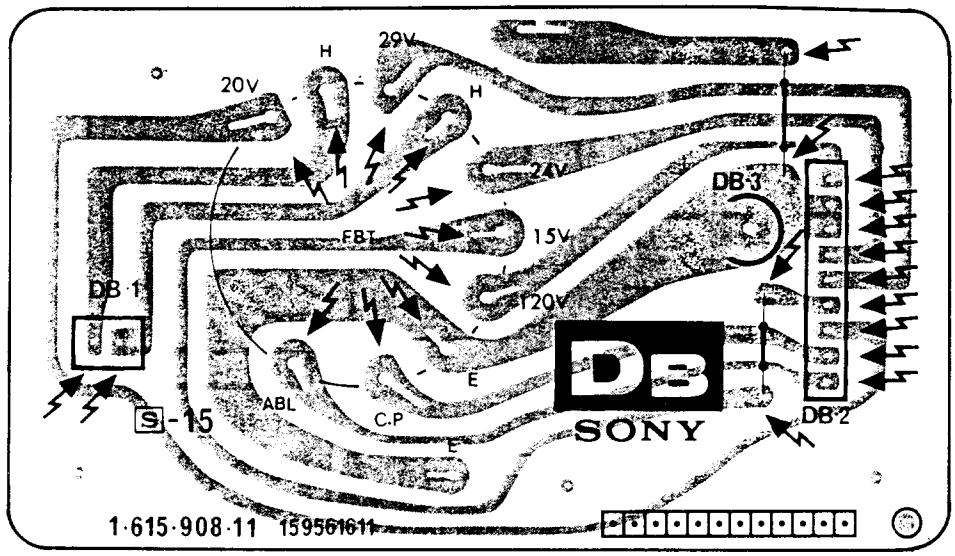


DB [F・B・T] HA [CUSTOMER CONTROL]

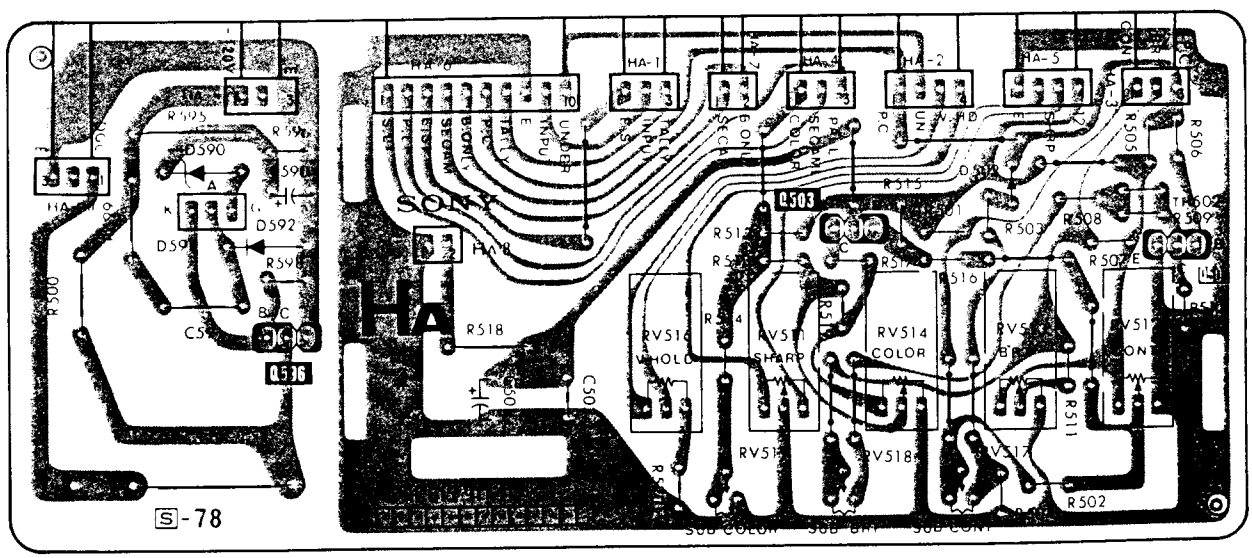
1 2 3 4 5 6 7

A B C D E F G H I

– DB Board –

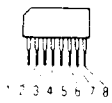


– HA Board –

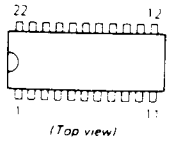


5-6. SEMICONDUCTORS

CX20061



μPC1377C



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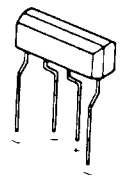
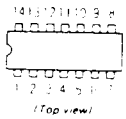
2SC1740S

2SD1015

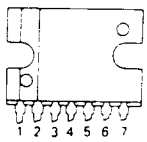
LB156



HD14011BP
TC4011BP
TC4030BP
μPD4030BC



μPC1378H-P



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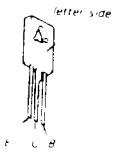
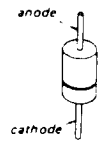
2SC2611



2SK105A

RDG15J



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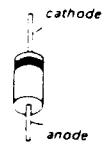
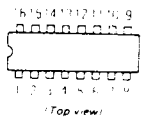
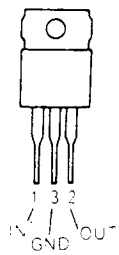
1S1555
1S2076
HZ6C2
RD39E-B2
RD6.2E-N2



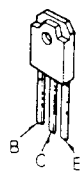
HD14538BP
TC4538BP



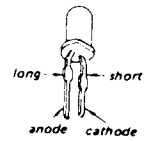
μPC7815H
μPC78M12H



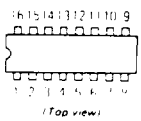
2SC2555



TLG123A
TLR123
TLY123

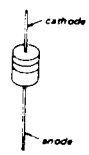


MB3759-SNY

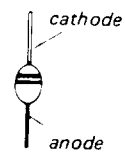


2SC3075

1SS119
1SS133
1SS148



U05G



2SA1048
2SA1115
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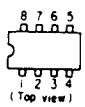
2SC2603
2SC403SP

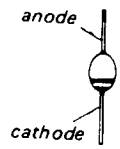
NJM4558D
μPC4558C



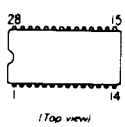
2SD1403

CR02AM-8

V19C
V19CSS
V19E



μPC1364C
μPC1365C



2SA1175
2SC2785

2SD774

GP08B
GP08D
RH1
RH1A

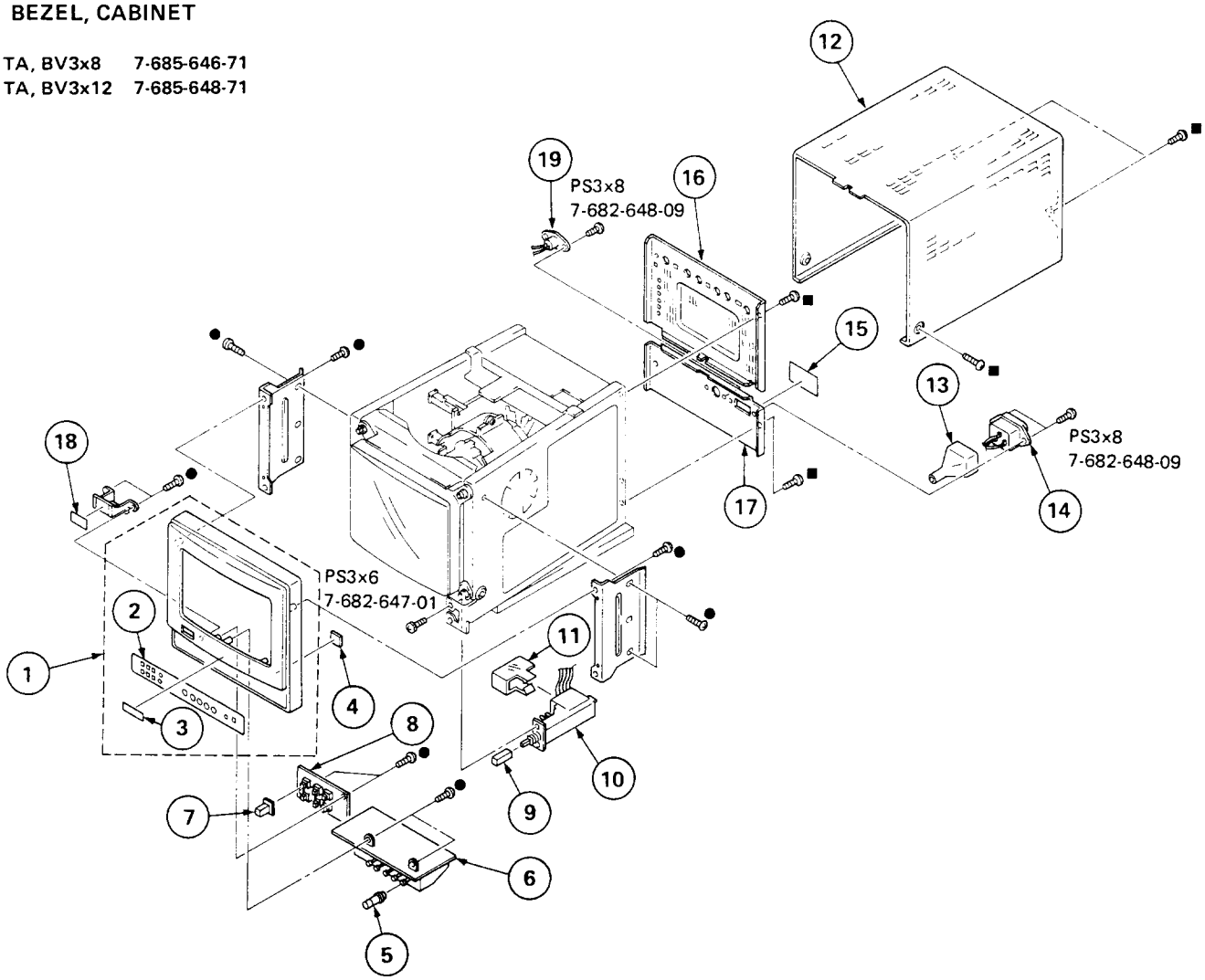
SECTION 6
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

6-1. BEZEL, CABINET

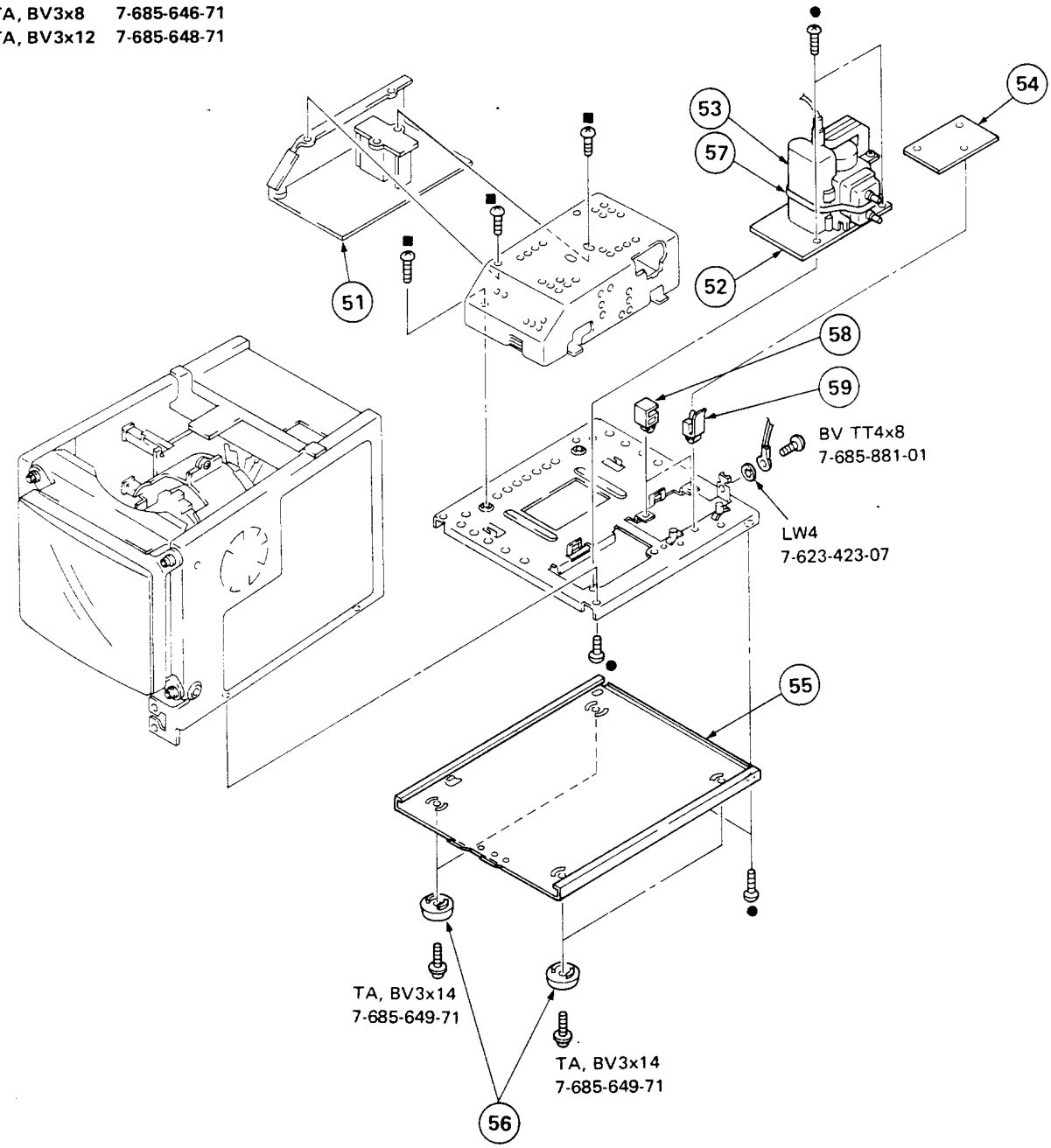
■: TA, BV3x8 7-685-646-71
●: TA, BV3x12 7-685-648-71



No.	Part No.	Description	Remark
1	X-4374-810-2	BEZEL ASSY	2,3
2	4-374-863-11	LABEL, CONTROL	
3	3-566-707-00	EMBLEM, SONY	
4	*1-614-496-11	X BOARD,	
5	4-374-820-01	KNOB, CONTROL	
6	*1-615-911-11	HA BOARD,	
7	4-369-627-11	PUSH BUTTON	
8	*1-615-912-11	HB BOARD,	
9	4-374-839-01	BUTTON (A)	
10	⚠1-570-201-11	SWITCH, PUSH (AC POWER)(1 KEY)	
11	*4-374-825-01	COVER, SWITCH	
12	*4-374-864-01	CABINET (UPPER)	
13	*4-601-466-11	COVER, 3P INLET	
14	⚠1-509-546-11	3P INLET	
15	*4-374-869-01	LABEL, MODEL NUMBER (LARGE)	
16	*4-374-861-01	PANEL, CONNECTOR	
17	*4-374-862-01	PANEL, POWER	
18	4-374-859-01	PLATE, NUMBER , TALLY	
19	1-509-718-00	DIN 4P SOCKET	

6-2. BOTTOM CABINET

■: TA, BV3x8 7-685-646-71
●: TA, BV3x12 7-685-648-71

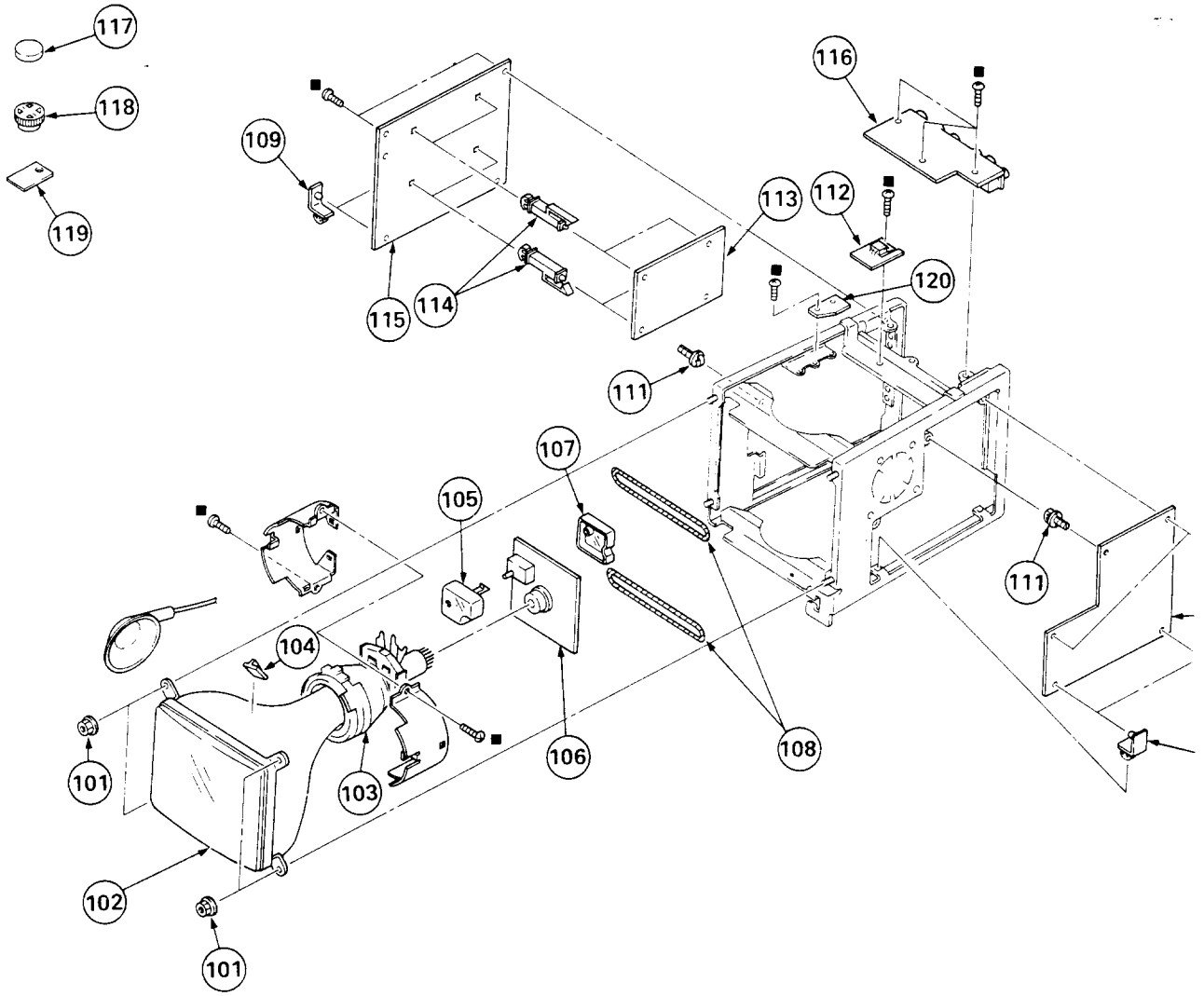


No.	Part No.	Description	Remark
51	*A-1245-290-A	FB BOARD, COMPLETE	
52	*1-615-908-11	DB BOARD,	
53	⚠ 1-439-358-11	TRANSFORMER ASSY , FLYBACK	
54	*1-615-907-11	FA BOARD,	
55	*4-374-865-01	CABINET (LOWER)	
56	4-374-857-01	FOOT	
57	4-374-856-01	TAPE, COPPER FOIL	
58	3-701-903-01	HOLDER, PC BOARD	
59	3-659-681-01	HOLDER, PC BOARD	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

6-3. CHASSIS

■: TA, BV3x8 7-685-646-71



No.	Part No.	Description	Remark
101	4-304-511-00	NUT, FLANGE	
102	⚠.8-737-151-05	CRT (A20JKU10X)	
103	⚠.1-451-265-11	DEFLECTION YOKE (SY-167)	
104	4-309-369-00	SPACER, DEFLECTION YOKE	
105	*4-374-822-01	COVER (A), CONTROL	
106	*A-1330-584-A	C BOARD, COMPLETE	
107	*4-374-806-01	COVER (B), CONTROL	
108	⚠.1-426-043-12	COIL, DEGAUSSING	
109	*3-701-832-00	HINGE, CIRCUIT BOARD	
110	*A-1345-555-A	DA BOARD, COMPLETE	
111	*4-303-473-00	SUPPORT, PC	
112	*1-615-160-11	DD BOARD	
113	*A-1135-296-A	BB BOARD, COMPLETE	
114	*3-657-516-00	SUPPORT, PC BOARD	
115	*A-1135-323-A	BA BOARD, COMPLETE	
116	*A-1270-161-A	Q BOARD, COMPLETE	
117	1-452-032-00	MAGNET, DISK; 10MM ø	
118	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ø	
119	1-452-126-11	MAGNET	
120	4-374-868-01	INSULATOR (DD)	

The components identif
by shading and mark ⚠ a
critical for safety.
Replace only with pa
number specified.

SECTION 7
ELECTRICAL PARTS LIST

BB

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

When indicating parts by reference number, please include the board name.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
• MF : μF, PF : μμF

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μH

Ref.No.	Part No.	Description				Remark
	*A-1135-296-A	BB BOARD, COMPLETE				
		**********				
		CONNECTOR				
BB1	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
BB2	*1-564-443-11	PLUG, CONNECTOR (2.5MM) 7P				
BB3	*1-564-354-21	PLUG, CONNECTOR (2.5MM) 3P				
BB4	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
		CAPACITOR				
C314	1-123-333-00	ELECT	100MF	20%	25V	
C315	1-123-333-00	ELECT	100MF	20%	25V	
C317	1-123-381-00	ELECT	2.2MF	20%	50V	
C318	1-102-119-00	CERAMIC	0.0015MF	10%	50V	
C319	1-102-971-00	CERAMIC	82PF	5%	50V	
C320	1-106-184-00	MYLAR	0.0033MF	10%	100V	
C321	1-101-361-00	CERAMIC	150PF	5%	50V	
C322	1-106-188-00	MYLAR	0.0047MF	10%	100V	
C323	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C324	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C325	1-123-329-51	ELECT	10MF	20%	25V	
C326	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C330	1-102-973-00	CERAMIC	100PF	5%	50V	
C353	1-123-329-51	ELECT	10MF	20%	25V	
C354	1-101-888-00	CERAMIC	68PF	5%	50V	
C355	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C356	1-123-333-00	ELECT	100MF	20%	25V	
C358	1-102-824-00	CERAMIC	470PF	5%	50V	
C359	1-123-329-51	ELECT	10MF	20%	25V	
C360	1-123-380-00	ELECT	1MF	20%	50V	
C361	1-123-329-51	ELECT	10MF	20%	25V	
C362	1-102-980-00	CERAMIC	270PF	5%	50V	
C363	1-102-978-00	CERAMIC	220PF	5%	50V	
C395	1-123-329-51	ELECT	10MF	20%	25V	
C396	1-108-599-00	MYLAR	0.068MF	5%	50V	
C397	1-102-973-00	CERAMIC	100PF	5%	50V	
		DIODE				
D301	8-719-911-19	DIODE 1SS119				
		IC				
IC254	8-759-240-11	IC TC4011BP				
IC255	8-759-345-38	IC HD14538BP				
IC256	8-750-000-74	IC CX20061				
IC257	8-759-345-38	IC HD14538BP				
IC258	8-750-000-74	IC CX20061				
		COIL				
L260	1-408-417-00	MICRO INDUCTOR 47UH				
		TRANSISTOR				
Q275	8-729-603-30	TRANSISTOR 2SC403SP-3				
Q276	8-729-245-83	TRANSISTOR 2SC2458				
Q277	8-729-204-83	TRANSISTOR 2SA1048GR				
Q278	8-729-245-83	TRANSISTOR 2SC2458				
Q286	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R347	1-247-865-00	CARBON	27K	5%	1/6W	
R348	1-247-841-00	CARBON	2.7K	5%	1/6W	
R349	1-247-831-00	CARBON	1K	5%	1/6W	
R350	1-247-831-00	CARBON	1K	5%	1/6W	
R352	1-247-817-00	CARBON	270	5%	1/6W	
R353	1-247-831-00	CARBON	1K	5%	1/6W	
R355	1-247-871-00	CARBON	47K	5%	1/6W	
R356	1-247-889-00	CARBON	270K	5%	1/6W	
R357	1-247-823-00	CARBON	470	5%	1/6W	
R358	1-247-865-00	CARBON	27K	5%	1/6W	
R359	1-247-847-00	CARBON	4.7K	5%	1/6W	
R360	1-247-841-00	CARBON	2.7K	5%	1/6W	
R361	1-247-863-00	CARBON	22K	5%	1/6W	
R362	1-247-859-00	CARBON	15K	5%	1/6W	
R363	1-247-831-00	CARBON	1K	5%	1/6W	
R364	1-247-871-00	CARBON	47K	5%	1/6W	
R365	1-249-421-11	CARBON	2.2K	5%	1/6W	
R384	1-247-867-00	CARBON	33K	5%	1/6W	
R386	1-247-841-00	CARBON	2.7K	5%	1/6W	
R387	1-247-835-00	CARBON	1.5K	5%	1/6W	
R388	1-247-841-00	CARBON	2.7K	5%	1/6W	
R389	1-249-421-11	CARBON	2.2K	5%	1/6W	
R390	1-247-807-00	CARBON	100	5%	1/6W	
R391	1-247-871-00	CARBON	47K	5%	1/6W	
R392	1-247-869-00	CARBON	39K	5%	1/6W	
R393	1-247-841-00	CARBON	2.7K	5%	1/6W	
R394	1-247-835-00	CARBON	1.5K	5%	1/6W	
R453	1-249-429-11	CARBON	10K	5%	1/6W	
R454	1-249-429-11	CARBON	10K	5%	1/6W	
R459	1-247-831-00	CARBON	1K	5%	1/6W	
R460	1-246-463-25	CARBON	390	5%	1/4W	
R461	1-247-831-00	CARBON	1K	5%	1/6W	
R462	1-247-879-00	CARBON	100K	5%	1/6W	
R463	1-247-700-11	CARBON	100	5%	1/4W	
R465	1-249-421-11	CARBON	2.2K	5%	1/6W	
R466	1-247-863-00	CARBON	22K	5%	1/6W	
R467	1-247-852-00	CARBON	7.5K	5%	1/6W	
R468	1-247-815-00	CARBON	220	5%	1/6W	
R469	1-247-873-00	CARBON	56K	5%	1/6W	
R470	1-247-879-00	CARBON	100K	5%	1/6W	
R490	1-247-857-00	CARBON	12K	5%	1/6W	
R491	1-247-847-00	CARBON	4.7K	5%	1/6W	
		VARIABLE RESISTOR				
RV257	1-226-775-00	RES, ADJ, METAL GLAZE 100K				
RV265	1-226-773-00	RES, ADJ, METAL GLAZE 22K				
RV266	1-226-775-00	RES, ADJ, METAL GLAZE 100K				

BA

Ref.No.	Part No.	Description				Remark
	*A-1135-323-A	BA BOARD, COMPLETE				
		**********				
		CONNECTOR				
BA1	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P				
BA2	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P				
BA4	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
BA5	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
BA6	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P				
BA7	*1-564-443-11	PLUG, CONNECTOR (2.5MM) 7P				
BA8	*1-564-443-11	PLUG, CONNECTOR (2.5MM) 7P				
BA9	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
BA10	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
BA11	*1-564-354-21	PLUG, CONNECTOR (2.5MM) 3P				
BA12	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
		CAPACITOR				
C251	1-102-953-00	CERAMIC	18PF	5%	50V	
C253	1-123-333-00	ELECT	100MF	20%	25V	
C254	1-101-004-00	CERAMIC	0.01MF		50V	
C255	1-102-662-00	CERAMIC	7PF	0.5PF	50V	
C256	1-102-662-00	CERAMIC	7PF	0.5PF	50V	
C257	1-102-662-00	CERAMIC	7PF	0.5PF	50V	
C258	1-102-662-00	CERAMIC	7PF	0.5PF	50V	
C259	1-123-318-00	ELECT	33MF	20%	16V	
C260	1-101-361-00	CERAMIC	150PF	5%	50V	
C261	1-123-380-00	ELECT	1MF	20%	50V	
C262	1-102-973-00	CERAMIC	100PF	5%	50V	
C263	1-123-819-00	ELECT	33MF	20%	25V	
C264	1-101-006-21	CERAMIC	0.047MF		50V	
C265	1-101-004-00	CERAMIC	0.01MF		50V	
C267	1-101-004-00	CERAMIC	0.01MF		50V	
C268	1-101-004-00	CERAMIC	0.01MF		50V	
C269	1-123-318-00	ELECT	33MF	20%	16V	
C270	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C271	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C272	1-101-006-21	CERAMIC	0.047MF		50V	
C273	1-102-679-00	CERAMIC	120PF	5%	50V	
C274	1-121-257-00	ELECT	4.7MF		16V	
C275	1-121-257-00	ELECT	4.7MF		16V	
C276	1-101-361-00	CERAMIC	150PF	5%	50V	
C277	1-101-361-00	CERAMIC	150PF	5%	50V	
C278	1-102-971-00	CERAMIC	82PF	5%	50V	
C279	1-102-971-00	CERAMIC	82PF	5%	50V	
C280	1-123-333-00	ELECT	100MF	20%	25V	
C281	1-101-006-21	CERAMIC	0.047MF		50V	
C282	1-102-892-00	CERAMIC	22PF	5%	50V	
C283	1-102-676-00	CERAMIC	68PF	5%	50V	
C284	1-106-220-00	MYLAR	0.1MF	10%	100V	
C285	1-102-892-00	CERAMIC	22PF	5%	50V	
C286	1-123-379-00	ELECT	0.47MF	20%	50V	
C287	1-123-381-00	ELECT	2.2MF	20%	50V	
C288	1-123-380-00	ELECT	1MF	20%	50V	
C289	1-123-608-00	ELECT	0.22MF	20%	50V	
C290	1-123-607-00	ELECT	0.1MF	20%	50V	
C291	1-123-608-00	ELECT	0.22MF	20%	50V	
C292	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C293	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C294	1-161-313-00	CERAMIC	150PF	10%	50V	
C295	1-102-937-00	CERAMIC	4PF	0.5PF	50V	
C296	1-123-332-00	ELECT	47MF	20%	25V	
C297	1-101-006-21	CERAMIC	0.047MF		50V	
C298	1-123-356-00	ELECT	10MF	20%	16V	
C299	1-102-678-00	CERAMIC	100PF	5%	50V	
C300	1-101-006-21	CERAMIC	0.047MF		50V	
C301	1-101-004-00	CERAMIC	0.01MF		50V	
C302	1-101-004-00	CERAMIC	0.01MF		50V	
C303	1-101-004-00	CERAMIC	0.01MF		50V	
C304	1-102-965-00	CERAMIC	39PF	5%	50V	
C305	1-102-937-00	CERAMIC	4PF	0.5PF	50V	
C306	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C307	1-131-368-00	TANTALUM	3.3MF	10%	16V	
C308	1-123-356-00	ELECT	10MF	20%	16V	
C309	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C310	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C311	1-123-380-00	ELECT	1MF	20%	50V	
C312	1-101-006-21	CERAMIC	0.047MF		50V	
C313	1-123-333-00	ELECT	100MF	20%	25V	
C323	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C326	1-101-880-00	CERAMIC	47PF	5%	50V	
C327	1-102-944-00	CERAMIC	7PF	0.5PF	50V	
C328	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C329	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C330	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C331	1-101-880-00	CERAMIC	47PF	5%	50V	
C332	1-101-880-00	CERAMIC	47PF	5%	50V	
C333	1-102-938-00	CERAMIC	1PF	0.5PF	50V	
C334	1-102-963-00	CERAMIC	33PF	5%	50V	
C335	1-131-399-00	TANTALUM	0.033MF	20%	35V	
C336	1-123-380-00	ELECT	1MF	20%	50V	
C340	1-101-006-21	CERAMIC	0.047MF		50V	
C343	1-123-329-51	ELECT	10MF	20%	25V	
C344	1-123-379-00	ELECT	0.47MF	20%	50V	
C345	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C346	1-102-963-00	CERAMIC	33PF	5%	50V	
C347	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C348	1-106-212-00	MYLAR	0.047MF	10%	100V	
C349	1-106-212-00	MYLAR	0.047MF	10%	100V	
C350	1-123-381-00	ELECT	2.2MF	20%	50V	
C351	1-123-369-00	ELECT	4.7MF	20%	50V	
C352	1-123-380-00	ELECT	1MF	20%	50V	
C365	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C366	1-123-382-00	ELECT	3.3MF	20%	50V	
C367	1-101-004-00	CERAMIC	0.01MF		50V	
C368	1-102-129-00	CERAMIC	0.01MF	10%	50V	

Ref.No.	Part No.	Description				Remark
C369	1-123-333-00	ELECT	100MF	20%	25V	
C370	1-123-329-51	ELECT	10MF	20%	25V	
C381	1-123-333-00	ELECT	100MF	20%	25V	
C382	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C386	1-102-820-00	CERAMIC	330PF	5%	50V	
C387	1-102-820-00	CERAMIC	330PF	5%	50V	
C388	1-102-820-00	CERAMIC	330PF	5%	50V	
		DIODE				
D251	8-719-911-19	DIODE 1SS119				
D252	8-719-911-19	DIODE 1SS119				
D253	8-719-911-19	DIODE 1SS119				
D254	8-719-911-19	DIODE 1SS119				
D255	8-719-911-19	DIODE 1SS119				
D257	8-719-911-19	DIODE 1SS119				
D258	8-719-911-19	DIODE 1SS119				
D259	8-719-911-19	DIODE 1SS119				
		DELAY LINE				
DL251	1-415-330-00	DELAY LINE, Y				
DL252	1-415-122-31	DELAY LINE, 1H (PAL)				
		IC				
IC251	8-750-006-10	IC CX20061				
IC252	8-759-100-15	IC UPC1364C2				
IC253	8-759-113-65	IC UPC1365C				
		COIL				
L252	1-409-193-00	COIL 3.58MHZ TRAP				
L253	1-409-193-00	COIL 3.58MHZ TRAP				
L254	1-408-418-00	MICRO INDUCTOR 56UH				
L255	1-408-408-00	MICRO INDUCTOR 8.2UH				
L256	1-408-418-00	MICRO INDUCTOR 56UH				
L257	1-408-416-00	MICRO INDUCTOR 39UH				
L258	1-408-406-00	MICRO INDUCTOR 5.6UH				
L262	1-408-414-00	MICRO INDUCTOR 27UH				
		TRANSISTOR				
Q251	8-729-603-30	TRANSISTOR 2SC403SP-3				
Q252	8-729-245-83	TRANSISTOR 2SC2458				
Q253	8-729-245-83	TRANSISTOR 2SC2458				
Q254	8-729-245-83	TRANSISTOR 2SC2458				
Q255	8-729-245-83	TRANSISTOR 2SC2458				
Q256	8-729-245-83	TRANSISTOR 2SC2458				
Q257	8-729-603-30	TRANSISTOR 2SC403SP-3				
Q258	8-729-204-83	TRANSISTOR 2SA1048GR				
Q259	8-729-245-83	TRANSISTOR 2SC2458				
Q260	8-729-245-83	TRANSISTOR 2SC2458				
Q261	8-729-204-83	TRANSISTOR 2SA1048GR				
Q262	8-729-204-83	TRANSISTOR 2SA1048GR				
Q263	8-729-245-83	TRANSISTOR 2SC2458				
Q264	8-729-245-83	TRANSISTOR 2SC2458				
Q265	8-729-115-30	TRANSISTOR 2SK105A-30				
Q266	8-729-115-30	TRANSISTOR 2SK105A-30				
Q267	8-729-245-83	TRANSISTOR 2SC2458				
Q268	8-729-245-83	TRANSISTOR 2SC2458				
Q269	8-729-204-83	TRANSISTOR 2SA1048GR				
Q270	8-729-603-30	TRANSISTOR 2SC403SP-3				
Q271	8-729-178-55	TRANSISTOR 2SC2785-E				
Q272	8-729-245-83	TRANSISTOR 2SC2458				
Q273	8-729-603-30	TRANSISTOR 2SC403SP-3				
Q274	8-729-245-83	TRANSISTOR 2SC2458				
Q279	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R251	1-247-867-00	CARBON	33K	5%	1/6W	
R252	1-247-851-00	CARBON	6.8K	5%	1/6W	
R253	1-247-825-00	CARBON	560	5%	1/6W	
R254	1-247-833-00	CARBON	1.2K	5%	1/6W	
R257	1-247-831-00	CARBON	1K	5%	1/6W	
R258	1-247-807-00	CARBON	100	5%	1/6W	
R259	1-247-835-00	CARBON	1.5K	5%	1/6W	
R260	1-247-835-00	CARBON	1.5K	5%	1/6W	
R261	1-247-831-00	CARBON	1K	5%	1/6W	
R262	1-247-831-00	CARBON	1K	5%	1/6W	
R263	1-247-819-00	CARBON	330	5%	1/6W	
R264	1-249-429-11	CARBON	10K	5%	1/6W	
R265	1-247-867-00	CARBON	33K	5%	1/6W	
R266	1-247-831-00	CARBON	1K	5%	1/6W	
R267	1-247-819-00	CARBON	330	5%	1/6W	
R268	1-247-867-00	CARBON	33K	5%	1/6W	
R269	1-249-429-11	CARBON	10K	5%	1/6W	
R270	1-247-831-00	CARBON	1K	5%	1/6W	
R271	1-247-807-00	CARBON	100	5%	1/6W	
R272	1-247-835-00	CARBON	1.5K	5%	1/6W	
R273	1-247-807-00	CARBON	100	5%	1/6W	
R274	1-247-831-00	CARBON	1K	5%	1/6W	
R275	1-247-819-00	CARBON	330	5%	1/6W	
R276	1-247-819-00	CARBON	330	5%	1/6W	
R277	1-247-873-00	CARBON	56K	5%	1/6W	
R278	1-247-877-00	CARBON	82K	5%	1/6W	
R279	1-247-807-00	CARBON	100	5%	1/6W	
R280	1-247-861-00	CARBON	18K	5%	1/6W	
R281	1-249-429-11	CARBON	10K	5%	1/6W	
R282	1-247-807-00	CARBON	100	5%	1/6W	
R283	1-247-867-00	CARBON	33K	5%	1/6W	
R284	1-247-867-00	CARBON	33K	5%	1/6W	
R285	1-247-879-00	CARBON	100K	5%	1/6W	
R286	1-247-815-00	CARBON	220	5%	1/6W	
R287	1-247-815-00	CARBON	220	5%	1/6W	
R288	1-247-807-00	CARBON	100	5%	1/6W	
R289	1-247-823-00	CARBON	470	5%	1/6W	
R290	1-247-821-00	CARBON	390	5%	1/6W	
R291	1-247-827-00	CARBON	680	5%	1/6W	
R292	1-247-847-00	CARBON	4.7K	5%	1/6W	
R293	1-247-847-00	CARBON	4.7K	5%	1/6W	

BA

Ref.No.	Part No.	Description				Remark
R294	1-247-815-00	CARBON	220	5%	1/6W	
R295	1-247-815-00	CARBON	220	5%	1/6W	
R296	1-247-847-00	CARBON	4.7K	5%	1/6W	
R297	1-247-815-00	CARBON	220	5%	1/6W	
R298	1-247-133-00	CARBON	1.2K	5%	1/4W	
R299	1-247-819-00	CARBON	330	5%	1/6W	
R300	1-247-879-00	CARBON	100K	5%	1/6W	
R301	1-247-879-00	CARBON	100K	5%	1/6W	
R302	1-247-145-00	CARBON	3.9K	5%	1/4W	
R303	1-247-704-11	CARBON	220	5%	1/4W	
R304	1-247-704-11	CARBON	220	5%	1/4W	
R305	1-247-853-00	CARBON	8.2K	5%	1/6W	
R306	1-247-853-00	CARBON	8.2K	5%	1/6W	
R307	1-247-843-00	CARBON	3.3K	5%	1/6W	
R308	1-247-853-00	CARBON	8.2K	5%	1/6W	
R309	1-247-867-00	CARBON	33K	5%	1/6W	
R310	1-247-833-00	CARBON	1.2K	5%	1/6W	
R311	1-247-873-00	CARBON	56K	5%	1/6W	
R312	1-249-421-11	CARBON	2.2K	5%	1/6W	
R313	1-247-879-00	CARBON	100K	5%	1/6W	
R314	1-210-825-00	SOLID	3.3M	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/6W	
R316	1-247-833-00	CARBON	1.2K	5%	1/6W	
R317	1-247-807-00	CARBON	100	5%	1/6W	
R318	1-247-713-11	CARBON	1K	5%	1/4W	
R320	1-247-843-00	CARBON	3.3K	5%	1/6W	
R321	1-247-811-00	CARBON	150	5%	1/6W	
R322	1-247-837-00	CARBON	1.8K	5%	1/6W	
R323	1-247-827-00	CARBON	680	5%	1/6W	
R324	1-247-831-00	CARBON	1K	5%	1/6W	
R326	1-247-823-00	CARBON	470	5%	1/6W	
R327	1-249-421-11	CARBON	2.2K	5%	1/6W	
R328	1-249-429-11	CARBON	10K	5%	1/6W	
R329	1-247-847-00	CARBON	4.7K	5%	1/6W	
R330	1-247-833-00	CARBON	1.2K	5%	1/6W	
R332	1-247-823-00	CARBON	470	5%	1/6W	
R333	1-247-815-00	CARBON	220	5%	1/6W	
R334	1-247-843-00	CARBON	3.3K	5%	1/6W	
R335	1-249-421-11	CARBON	2.2K	5%	1/6W	
R336	1-247-823-00	CARBON	470	5%	1/6W	
R337	1-247-827-00	CARBON	680	5%	1/6W	
R338	1-247-853-00	CARBON	8.2K	5%	1/6W	
R339	1-249-429-11	CARBON	10K	5%	1/6W	
R340	1-247-831-00	CARBON	1K	5%	1/6W	
R341	1-247-807-00	CARBON	100	5%	1/6W	
R342	1-247-807-00	CARBON	100	5%	1/6W	
R343	1-247-883-00	CARBON	150K	5%	1/6W	
R344	1-249-429-11	CARBON	10K	5%	1/6W	
R345	1-247-843-00	CARBON	3.3K	5%	1/6W	
R346	1-247-791-00	CARBON	22	5%	1/6W	
R374	1-247-823-00	CARBON	470	5%	1/6W	
R375	1-247-827-00	CARBON	680	5%	1/6W	
R376	1-247-831-00	CARBON	1K	5%	1/6W	
R377	1-247-835-00	CARBON	1.5K	5%	1/6W	
R378	1-247-887-00	CARBON	220K	5%	1/6W	
R379	1-247-831-00	CARBON	1K	5%	1/6W	
R380	1-247-879-00	CARBON	100K	5%	1/6W	
R381	1-247-863-00	CARBON	22K	5%	1/6W	
R382	1-247-867-00	CARBON	33K	5%	1/6W	
R383	1-247-831-00	CARBON	1K	5%	1/6W	
R395	1-247-857-00	CARBON	12K	5%	1/6W	
R396	1-247-863-00	CARBON	22K	5%	1/6W	
R397	1-247-823-00	CARBON	470	5%	1/6W	
R398	1-247-831-00	CARBON	1K	5%	1/6W	
R399	1-249-421-11	CARBON	2.2K	5%	1/6W	
R400	1-247-865-00	CARBON	27K	5%	1/6W	
R401	1-247-865-00	CARBON	27K	5%	1/6W	
R402	1-247-877-00	CARBON	82K	5%	1/6W	
R403	1-247-847-00	CARBON	4.7K	5%	1/6W	
R404	1-247-883-00	CARBON	150K	5%	1/6W	
R406	1-247-821-00	CARBON	390	5%	1/6W	
R408	1-247-821-00	CARBON	390	5%	1/6W	
R410	1-247-821-00	CARBON	390	5%	1/6W	
R411	1-247-871-00	CARBON	47K	5%	1/6W	
R413	1-247-863-00	CARBON	22K	5%	1/6W	
R414	1-247-867-00	CARBON	33K	5%	1/6W	
R420	1-247-171-00	CARBON	47K	5%	1/4W	
R421	1-247-889-00	CARBON	270K	5%	1/6W	
R437	1-247-845-00	CARBON	3.9K	5%	1/6W	
R438	1-247-823-00	CARBON	470	5%	1/6W	
R439	1-247-791-00	CARBON	22	5%	1/6W	
R440	1-247-721-11	CARBON	4.7K	5%	1/4W	
R441	1-247-831-00	CARBON	1K	5%	1/6W	
R442	1-247-845-00	CARBON	3.9K	5%	1/6W	
R443	1-247-823-00	CARBON	470	5%	1/6W	
R444	1-247-791-00	CARBON	22	5%	1/6W	
R445	1-247-721-11	CARBON	4.7K	5%	1/4W	
R446	1-247-831-00	CARBON	1K	5%	1/6W	
R447	1-247-845-00	CARBON	3.9K	5%	1/6W	
R448	1-247-823-00	CARBON	470	5%	1/6W	
R449	1-247-791-00	CARBON	22	5%	1/6W	
R450	1-247-721-11	CARBON	4.7K	5%	1/4W	
R451	1-247-831-00	CARBON	1K	5%	1/6W	
R452	1-247-847-00	CARBON	4.7K	5%	1/6W	
R458	1-247-841-00	CARBON	2.7K	5%	1/6W	
R461	1-247-849-00	CARBON	5.6K	5%	1/6W	
R464	1-247-827-00	CARBON	680	5%	1/6W	
R465	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV251	1-228-719-00	RES, ADJ, CERAMIC CARBON	470
RV252	1-228-723-00	RES, ADJ, CERAMIC CARBON	4.7K
RV253	1-228-719-00	RES, ADJ, CERAMIC CARBON	470
RV255	1-228-722-00	RES, ADJ, CERAMIC CARBON	3.3K
RV256	1-228-725-00	RES, ADJ, CERAMIC CARBON	22K
RV258	1-224-660-00	RES, ADJ, METAL FILM	1K

BA FA FB

Ref.No.	Part No.	Description	Remark
RV259	1-224-493-00	RES, ADJ, METAL FILM 10K	
RV260	1-224-660-00	RES, ADJ, METAL FILM 1K	
RV261	1-224-493-00	RES, ADJ, METAL FILM 10K	
RV262	1-224-660-00	RES, ADJ, METAL FILM 1K	
RV263	1-224-493-00	RES, ADJ, METAL FILM 10K	
RV264	1-228-720-00	RES, ADJ, CERAMIC CARBON 1K	
		TRANSFORMER	
T251	1-404-081-00	TRANSFOMER, DELAY ADJUST	
T252	1-404-146-00	TRANSFORMER	
T253	1-408-532-00	COIL, VARIABLE	
T254	1-408-513-00	COIL (VARIABLE)	
T255	1-408-532-00	COIL, VARIABLE	
T256	1-425-794-00	BPT-2	
T257	1-405-372-00	COIL BAT	
		CRYSTAL	
X251	1-527-345-00	CRYSTAL, OSC	
**********			
	*1-615-907-11	FA BOARD ********	
		CAPACITOR	
C600	1-130-712-00	FILM 0.47MF 20% 250V	
	*4-316-137-00	COVER, CAPACITOR; C600	
		FUSE	
F601 ⚠	1-532-237-11	FUSE, TIME-LAG 3.15A/250V	
	1-533-087-00	HOLDER, FUSE; F601	
		CONNECTOR	
FA1	*1-508-765-00	3P PLUG (M)	
FA2	*1-508-786-00	2P PLUG (M)	
FA3	*1-508-786-00	2P PLUG (M)	
FA4	*1-508-765-00	3P PLUG (M)	
		RESISTOR	
R600	1-202-724-00	SOLID 2.7M 10% 1/2W	
**********			
	*A-1245-290-A	FB BOARD, COMPLETE **********	
	*2-430-232-00	INSULATOR (SR12E), TRANSISTOR	
	*4-374-808-01	SPACER, INSULATING	
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE	
	*4-374-846-11	COVER, CAPACITOR, CAP TYPE	
		CAPACITOR	
C606 ⚠	1-130-808-61	FILM 0.22MF 10% 400V	
C607 ⚠	1-161-743-51	CERAMIC 0.0047MF 400V	

Ref.No.	Part No.	Description			Remark
C608 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C609 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C610 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C611 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C612 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C613 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C614 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C615 ⚠	1-161-742-51	CERAMIC	0.0022MF	20%	400V
C616	1-123-581-00	ELECT	100MF	20%	400V
C617	1-136-173-00	FILM	0.47MF	5%	50V
C618	1-123-356-00	ELECT	10MF	20%	35V
C619	1-108-587-00	MYLAR	0.022MF	10%	50V
C620	1-161-328-00	CERAMIC	0.0047MF	30%	50V
C621	1-123-356-00	ELECT	10MF	20%	35V
C622	1-124-602-00	ELECT	2200MF	20%	35V
C623	1-108-833-00	MYLAR	0.0047MF	10%	50V
C624	1-123-356-00	ELECT	10MF	20%	35V
C625	1-106-180-00	MYLAR	0.0022MF	10%	50V
C626	1-102-074-00	CERAMIC	0.001MF	10%	50V
C631	1-123-362-00	ELECT	330MF	20%	50V
C632	1-130-806-00	FILM	0.1MF	10%	400V
C633	1-102-074-00	CERAMIC	0.001MF	10%	50V
		DIODE			
D610	8-719-300-63	DIODE L8-156			
D611	8-719-924-06	DIODE ERC24-06S			
D612	8-719-102-74	DIODE RD6.2E-N2			
D613	8-719-901-93	DIODE V19E			
D614	8-719-911-19	DIODE 1SS119			
D615	8-719-908-20	DIODE ERC88-009			
D616	8-719-102-90	DIODE RD10E-N2			
D625	8-719-924-06	DIODE ERC24-06S			
D626	8-719-101-24	DIODE RD39E-B2			
		CONNECTOR			
FB1	*1-508-765-00	3P PLUG (M)			
FB2	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P			
		IC			
IC610	8-759-171-15	IC UPC7815H			
IC611	8-759-906-62	IC MB3759-SNY			
		COIL			
L611	1-408-412-00	MICRO INDUCTOR 18UH			
L612	1-407-365-00	COIL, CHOKE			
		TRANSISTOR			
Q610	8-729-802-07	TRANSISTOR 2SD1403-CA			
Q611	8-729-177-43	TRANSISTOR 2SD774			
Q612	8-729-177-43	TRANSISTOR 2SD774			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

FB Q

Ref.No.	Part No.	Description				Remark
		RESISTOR				
R611	1-206-676-00	METAL OXIDE	3.3K	5%	2W	F
R612	1-247-725-11	CARBON	10K	5%	1/4W	
R613	1-244-929-00	CARBON	220K	5%	1/2W	
R614	1-247-807-00	CARBON	100	5%	1/6W	
R615	1-247-827-00	CARBON	680	5%	1/6W	
R616	1-215-868-00	METAL OXIDE	680	5%	1W	F
R617	1-247-847-00	CARBON	4.7K	5%	1/6W	
R618	1-247-847-00	CARBON	4.7K	5%	1/6W	
R619	1-215-463-00	METAL	56K	1%	1/6W	
R620	1-215-445-00	METAL	10K	1%	1/6W	
R621	1-247-847-00	CARBON	4.7K	5%	1/6W	
R622	1-249-421-11	CARBON	2.2K	5%	1/6W	
R623	1-247-879-00	CARBON	100K	5%	1/6W	
R624	1-249-421-11	CARBON	2.2K	5%	1/6W	
R625	1-213-135-11	METAL OXIDE	220	5%	1W	F
R627	1-215-447-00	METAL	12K	1%	1/6W	
R628	1-215-465-00	METAL	68K	1%	1/6W	
R629	1-215-447-00	METAL	12K	1%	1/6W	
R630	1-247-849-00	CARBON	5.6K	5%	1/6W	
R641	1-249-421-11	CARBON	2.2K	5%	1/6W	
R645	1-247-034-00	CARBON	220	5%	1/8W	F
R646	1-247-825-00	CARBON	560	5%	1/6W	
R647 ⚠	1-205-636-11	CEMENTED	3.3	5%	5W	
R648	1-213-160-11	METAL OXIDE	27K	5%	1W	F
R649	1-213-160-11	METAL OXIDE	27K	5%	1W	F
		VARIABLE RESISTOR				
RV610	1-230-233-11	RES, ADJ, CERAMIC CARBON 4.7K				
		TRANSFORMER				
T609 ⚠	1-421-760-11	LFT				
T610 ⚠	1-421-760-11	LFT				
T611 ⚠	1-448-146-21	TRANSFORMER, CONVERTER (S.R.T)				
T612 ⚠	1-437-173-11	TRANSFORMER, DRIVE				
		VARISTOR				
VDR610	1-807-181-11	VARISTOR SNR-14A420K				

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*A-1270-161-A Q BOARD, COMPLETE
****

1-536-937-11 TERMINAL BOARD, INPUT/OUTPUT

CAPACITOR

C201	1-123-333-00	ELECT	100MF	20%	25V
C202	1-101-006-21	CERAMIC	0.047MF		50V
C203	1-123-329-51	ELECT	10MF	20%	25V
C204	1-123-318-00	ELECT	33MF	20%	16V
C205	1-123-318-00	ELECT	33MF	20%	16V
C206	1-123-329-51	ELECT	10MF	20%	25V
C207	1-123-318-00	ELECT	33MF	20%	
C208	1-123-329-51	ELECT	10MF	20%	
C209	1-123-333-00	ELECT	100MF	20%	
C210	1-101-006-21	CERAMIC	0.047MF		
C211	1-123-329-51	ELECT	10MF	20%	
C212	1-123-318-00	ELECT	33MF	20%	
C213	1-123-318-00	ELECT	33MF	20%	
C214	1-123-318-00	ELECT	33MF	20%	
C215	1-123-329-51	ELECT	10MF	20%	
C216	1-123-333-00	ELECT	100MF	20%	
C217	1-101-006-21	CERAMIC	0.047MF		
C219	1-101-006-21	CERAMIC	0.047MF		
C220	1-101-006-21	CERAMIC	0.047MF		
C221	1-101-006-21	CERAMIC	0.047MF		

DIODE

D201	8-719-911-19	DIODE 1SS119
D206	8-719-102-90	DIODE RD10E-N2

IC

IC201	8-752-006-10	IC CX20061
IC203	8-752-006-10	IC CX20061

CONNECTOR

Q1	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P
Q2	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P
Q3	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P
Q4	*1-564-354-21	PLUG, CONNECTOR (2.5MM) 3P

TRANSISTOR

Q201	8-729-245-83	TRANSISTOR 2SC2458
Q202	8-729-245-83	TRANSISTOR 2SC2458
Q203	8-729-245-83	TRANSISTOR 2SC2458
Q209	8-729-245-83	TRANSISTOR 2SC2458
Q210	8-729-603-30	TRANSISTOR 2SC403SP-3
Q211	8-729-245-83	TRANSISTOR 2SC2458
Q212	8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

R201	1-214-702-00	METAL	75	1%	1/4W
R202	1-247-713-11	CARBON	1K	5%	1/4W
R203	1-247-875-00	CARBON	68K	5%	1/6W
R204	1-247-873-00	CARBON	56K	5%	1/6W
R205	1-247-831-00	CARBON	1K	5%	1/6W
R206	1-247-807-00	CARBON	100	5%	1/6W
R207	1-247-807-00	CARBON	100	5%	1/6W
R208	1-247-831-00	CARBON	1K	5%	1/6W
R209	1-247-799-00	CARBON	47	5%	1/6W
R210	1-214-702-00	METAL	75	1%	1/4W
R211	1-247-713-11	CARBON	1K	5%	1/4W
R212	1-247-875-00	CARBON	68K	5%	1/6W
R213	1-247-873-00	CARBON	56K	5%	1/6W
R214	1-247-831-00	CARBON	1K	5%	1/6W

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Q C DD DB

Ref.No.	Part No.	Description				Remark
R215	1-247-807-00	CARBON	100	5%	1/6W	
R216	1-247-849-00	CARBON	5.6K	5%	1/6W	
R217	1-247-843-00	CARBON	3.3K	5%	1/6W	
R218	1-214-702-00	METAL	75	1%	1/4W	
R219	1-247-713-11	CARBON	1K	5%	1/4W	
R220	1-247-875-00	CARBON	68K	5%	1/6W	
R221	1-247-873-00	CARBON	56K	5%	1/6W	
R222	1-247-853-00	CARBON	8.2K	5%	1/6W	
R223	1-247-841-00	CARBON	2.7K	5%	1/6W	
R224	1-247-807-00	CARBON	100	5%	1/6W	
R226	1-247-875-00	CARBON	68K	5%	1/6W	
R227	1-247-867-00	CARBON	33K	5%	1/6W	
R228	1-247-831-00	CARBON	1K	5%	1/6W	
R229	1-247-823-00	CARBON	470	5%	1/6W	
R230	1-247-831-00	CARBON	1K	5%	1/6W	
R231	1-247-807-00	CARBON	100	5%	1/6W	
R232	1-247-849-00	CARBON	5.6K	5%	1/6W	
R233	1-247-843-00	CARBON	3.3K	5%	1/6W	
R234	1-247-119-00	CARBON	330	5%	1/4W	
R235	1-247-819-00	CARBON	330	5%	1/6W	
R236	1-247-819-00	CARBON	330	5%	1/6W	
R237	1-247-867-00	CARBON	33K	5%	1/6W	
R238	1-247-823-00	CARBON	470	5%	1/6W	
R239	1-249-429-11	CARBON	10K	5%	1/6W	
R240	1-249-429-11	CARBON	10K	5%	1/6W	

SWITCH

S201	1-553-725-00	SWITCH, SLIDE	
S202	1-553-725-00	SWITCH, SLIDE	
S203	1-553-725-00	SWITCH, SLIDE	

****

*A-1330-584-A C BOARD, COMPLETE
****

1-526-691-00 SOCKET, CRT

CONNECTOR

C1	*1-564-442-11	PLUG, CONNECTOR (2.5MM)	6P
C2	*1-564-353-00	PLUG, CONNECTOR (2.5MM)	2P
C3	*1-564-354-00	PLUG, CONNECTOR (2.5MM)	3P
C4	*1-564-354-00	PLUG, CONNECTOR (2.5MM)	3P

CAPACITOR

C701	1-102-223-00	CERAMIC	0.0047MF	10%	2KV
C703	1-102-050-00	CERAMIC	0.01MF		500V
C704	1-123-933-00	ELECT	10MF	20%	160V

COIL

L701	1-407-704-00	MICRO INDUCTOR	82UH
L702	1-407-709-00	MICRO INDUCTOR	220UH

Ref.No.	Part No.	Description				Remark

NEON LAMP

NE702	1-519-013-13	DISCHARGE TUBE	
NE703	1-519-013-13	DISCHARGE TUBE	
NE704	1-519-013-13	DISCHARGE TUBE	
NL701	1-519-108-XX	LAMP, NEON ASSY	

TRANSISTOR

Q701	8-729-326-11	TRANSISTOR	2SC2611
Q702	8-729-326-11	TRANSISTOR	2SC2611
Q703	8-729-326-11	TRANSISTOR	2SC2611

RESISTOR

R701	1-202-842-11	SOLID	220K	10%	1/2W	
R702	1-202-719-00	SOLID	1M	10%	1/2W	
R703	1-202-838-00	SOLID	100K	10%	1/2W	
R706	1-213-156-00	METAL OXIDE	12K	5%	1W	F
R707	1-247-815-00	CARBON	220	5%	1/6W	
R709	1-202-822-00	SOLID	2.2K	10%	1/2W	
R710	1-213-156-00	METAL OXIDE	12K	5%	1W	F
R711	1-202-822-00	SOLID	2.2K	10%	1/2W	
R712	1-247-815-00	CARBON	220	5%	1/6W	
R714	1-213-156-00	METAL OXIDE	12K	5%	1W	F
R715	1-202-822-00	SOLID	2.2K	10%	1/2W	
R716	1-247-815-00	CARBON	220	5%	1/6W	

VARIABLE RESISTOR

RV701	1-230-164-21	RES, ADJ, METAL GLAZE	55M

SPARK GAP

SG701	1-519-063-XX	DISCHARGING GAP	

****

*1-615-160-11 DD BOARD
****

*1-564-451-11 PLUG, CONNECTOR (2.5MM) 3P

CAPACITOR

C870	1-161-328-00	CERAMIC	0.0047MF	30%	50V

IC

IC805	8-759-170-12	IC	UPC78M12H

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*1-615-908-11 DB BOARD
****

CONNECTOR

DB1	*1-564-353-00	PLUG, CONNECTOR (2.5MM)	2P
DB2	*1-564-445-11	PLUG, CONNECTOR (2.5MM)	9P

DA

Ref.No.	Part No.	Description				Remark
	*A-1345-555-A	DA BOARD, COMPLETE				
		**********				
		CAPACITOR				
C800	1-123-380-00	ELECT	1MF	20%	50V	
C801	1-108-599-00	MYLAR	0.068MF	10%	50V	
C802	1-108-837-00	MYLAR	0.01MF	10%	50V	
C803	1-108-837-00	MYLAR	0.01MF	10%	50V	
C804	1-123-369-00	ELECT	4.7MF	20%	25V	
C805	1-123-369-00	ELECT	4.7MF	20%	25V	
C806	1-130-868-00	FILM	0.0056MF	5%	50V	
C807	1-123-356-00	ELECT	10MF	20%	16V	
C808	1-123-356-00	ELECT	10MF	20%	50V	
C809	1-123-380-00	ELECT	1MF	20%	50V	
C810	1-161-059-11	CERAMIC	0.047MF	10%	50V	
C811	1-102-121-00	CERAMIC	0.0022MF	10%	50V	
C812	1-123-380-00	ELECT	1MF	20%	50V	
C813	1-123-356-00	ELECT	10MF	20%	16V	
C814	1-124-539-51	ELECT	330MF	20%	35V	
C815 ⚠	1-129-706-51	FILM	0.0022MF	10%	630V	
C816 ⚠	1-130-581-11	FILM	0.033MF	3%	600V	
C817 ⚠	1-129-706-51	FILM	0.0022MF	10%	630V	
C820	1-123-335-00	ELECT	330MF	20%	25V	
C822	1-102-030-00	CERAMIC	330PF	10%	500V	
C823	1-123-347-00	ELECT	330MF	20%	35V	
C824 ⚠	1-102-030-51	CERAMIC	330PF	10%	500V	
C825	1-123-933-00	ELECT	10MF	20%	160V	
C826	1-123-329-51	ELECT	10MF	20%	25V	
C828	1-130-781-00	FILM	0.22MF	10%	100V	
C830	1-123-356-00	ELECT	10MF	20%	16V	
C831	1-108-591-00	MYLAR	0.033MF	10%	50V	
C832	1-108-591-00	MYLAR	0.033MF	10%	50V	
C833	1-123-380-00	ELECT	1MF	20%	50V	
C834	1-136-173-00	FILM	0.47MF	5%	50V	
C835	1-123-322-00	ELECT	330MF	20%	16V	
C836	1-124-245-00	ELECT	4.7MF	20%	25V	
C837	1-123-379-00	ELECT	0.47MF	20%	50V	
C838	1-108-837-00	MYLAR	0.01MF	10%	50V	
C839	1-108-845-00	MYLAR	0.047MF	10%	50V	
C840	1-102-832-00	CERAMIC	330PF	10%	50V	
C841	1-123-360-00	ELECT	100MF	20%	50V	
C842	1-123-335-00	ELECT	330MF	20%	25V	
C843	1-108-837-00	MYLAR	0.01MF	10%	50V	
C844 ⚠	1-102-030-51	CERAMIC	330PF	10%	500V	
C845	1-136-337-11	FILM	3.3MF	10%	100V	
C846	1-124-258-00	ELECT	3.3MF	20%	25V	
C850	1-123-329-51	ELECT	10MF	20%	25V	
C851	1-106-176-00	MYLAR	0.0015MF	5%	50V	
C853	1-106-180-00	MYLAR	0.0022MF	5%	50V	
C854	1-102-529-00	CERAMIC	100PF	5%	50V	
C856	1-102-973-00	CERAMIC	100PF	10%	50V	
C857 ⚠	1-102-038-51	CERAMIC	0.001MF		500V	
C864	1-124-537-00	ELECT	1200MF	20%	35V	
C866	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C867	1-101-002-00	CERAMIC	0.0022MF		50V	
		DIODE				
D800	8-719-102-74	DIODE RD6.2E-N2				
D801	8-719-911-19	DIODE 1SS119				
D803	8-719-300-76	DIODE RH1A				
D804	8-719-300-76	DIODE RH1A				
D805 ⚠	8-719-901-95	DIODE V19CSS				
D806	8-719-901-93	DIODE V19E				
D807	8-719-901-93	DIODE V19E				
D808	8-719-901-93	DIODE V19E				
D809	8-719-911-55	DIODE U05G				
D810	8-719-911-19	DIODE 1SS119				
D811	8-719-911-19	DIODE 1SS119				
D812	8-719-911-19	DIODE 1SS119				
D813	8-719-911-19	DIODE 1SS119				
D814	8-719-911-19	DIODE 1SS119				
D815	8-719-911-19	DIODE 1SS119				
D816	8-719-901-83	DIODE 1SS83				
D817	8-719-911-19	DIODE 1SS119				
D818	8-719-911-19	DIODE 1SS119				
D819	8-719-911-19	DIODE 1SS119				
D820	8-719-911-19	DIODE 1SS119				
		CONNECTOR				
DA1	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P				
DA2	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
DA3	*1-564-443-11	PLUG, CONNECTOR (2.5MM) 7P				
DA4	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P				
DA5	*1-508-765-00	3P PLUG (M)				
DA6	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
DA7	*1-564-445-11	PLUG, CONNECTOR (2.5MM) 9P				
DA8	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P				
		IC				
IC800	8-759-100-60	IC UPC1377C				
IC801	8-759-105-82	IC UPC1378H-P				
	3-701-833-01	HEAD, WASHER, TAPPING SCREW; IC801				
IC802	8-759-145-58	IC UPC4558C				
IC803	8-759-240-30	IC TC4030BP				
IC804	8-759-245-38	IC TC4538BP				
		COIL				
L800	1-408-242-00	MICRO INDUCTOR 10MMH				
L802	1-408-403-00	MICRO INDUCTOR 3.3UH				
L803 ⚠	1-459-370-11	COIL, FERRITE (HLC)				
L804 ⚠	1-459-597-11	COIL, VARIABLE				
L805	1-459-403-00	COIL (WITH CORE)				
L806	1-408-421-00	MICRO INDUCTOR 100UH				

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				Remark
		TRANSISTOR				
Q800	8-729-245-83	TRANSISTOR 2SC2458				
Q801	8-729-201-62	TRANSISTOR 2SC2555-2				
	*4-363-404-00	HOLDER, IC; Q801				
	4-363-414-00	SPACER, MICA; Q801				
Q802	8-729-201-99	TRANSISTOR 2SC3075				
Q803	8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R800	1-249-429-11	CARBON	10K	5%	1/6W	
R801	1-247-850-00	CARBON	6.2K	5%	1/6W	
R802	1-249-429-11	CARBON	10K	5%	1/6W	
R803	1-247-877-00	CARBON	82K	5%	1/6W	
R804	1-247-857-00	CARBON	12K	5%	1/6W	
R807	1-247-851-00	CARBON	6.8K	5%	1/6W	
R808	1-247-867-00	CARBON	33K	5%	1/6W	
R809	1-247-827-00	CARBON	680	5%	1/6W	
R810	1-247-827-00	CARBON	680	5%	1/6W	
R811	1-247-827-00	CARBON	680	5%	1/6W	
R812	1-206-648-00	METAL OXIDE	220	5%	2W	F
R813	1-212-360-00	METAL OXIDE	1	5%	1W	F
R815	1-247-851-00	CARBON	6.8K	5%	1/6W	
R816	1-249-429-11	CARBON	10K	5%	1/6W	
R818	1-249-429-11	CARBON	10K	5%	1/6W	
R819	1-215-461-00	METAL	47K	1%	1/6W	
R820	1-215-449-00	METAL	15K	1%	1/6W	
R821	1-247-879-00	CARBON	100K	5%	1/6W	
R822	1-213-143-00	METAL OXIDE	1K	5%	1W	F
R824	1-217-383-00	FUSIBLE	4.7	5%	1/4W	F
R825	1-210-859-00	CARBON	1.2	5%	1/8W	F
R826	1-215-445-00	METAL	10K	1%	1/6W	
R827	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R828	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R829	1-213-149-00	METAL OXIDE	3.3K	5%	1W	F
R830	1-249-429-11	CARBON	10K	5%	1/6W	
R831	1-249-429-11	CARBON	10K	5%	1/6W	
R832	1-247-851-00	CARBON	6.8K	5%	1/6W	
R833	1-247-863-00	CARBON	22K	5%	1/6W	
R834	1-247-859-00	CARBON	15K	5%	1/6W	
R835	1-249-429-11	CARBON	10K	5%	1/6W	
R836	1-247-871-00	CARBON	47K	5%	1/6W	
R837	1-247-831-00	CARBON	1K	5%	1/6W	
R838	1-247-824-00	CARBON	510	5%	1/6W	
R839	1-247-852-00	CARBON	7.5K	5%	1/6W	
R840	1-247-863-00	CARBON	22K	5%	1/6W	
R842	1-249-429-11	CARBON	10K	5%	1/6W	
R843	1-247-865-00	CARBON	27K	5%	1/6W	
R844	1-247-817-00	CARBON	270	5%	1/6W	
R845	1-212-368-11	METAL OXIDE	4.7	5%	1W	F
R846	1-213-138-00	METAL OXIDE	390	5%	1W	F
R847	1-213-138-00	METAL OXIDE	390	5%	1W	F
R848	1-213-139-00	METAL OXIDE	470	5%	1W	F
R849	1-247-848-00	CARBON	5.1K	5%	1/6W	
R850	1-249-429-11	CARBON	10K	5%	1/6W	
R851	1-249-429-11	CARBON	10K	5%	1/6W	
R852	1-249-411-11	CARBON	330	5%	1/8W	F
R853	1-247-831-00	CARBON	1K	5%	1/6W	
R855	1-215-434-00	METAL	3.6K	1%	1/6W	
R860	1-247-847-00	CARBON	4.7K	5%	1/6W	
R861	1-247-847-00	CARBON	4.7K	5%	1/6W	
R862	1-247-867-00	CARBON	33K	5%	1/6W	
R863	1-247-831-00	CARBON	1K	5%	1/6W	
R864	1-247-879-00	CARBON	100K	5%	1/6W	
R866	1-249-429-11	CARBON	10K	5%	1/6W	
R867	1-215-433-00	METAL	3.3K	1%	1/6W	
R868	1-247-871-00	CARBON	47K	5%	1/6W	
R869	1-247-871-00	CARBON	47K	5%	1/6W	
R870	1-215-469-00	METAL	100K	1%	1/6W	
R871	1-247-895-00	CARBON	470K	5%	1/6W	
R872	1-247-889-00	CARBON	270K	5%	1/6W	
R873	1-247-831-00	CARBON	1K	5%	1/6W	
R874	1-247-847-00	CARBON	4.7K	5%	1/6W	
R877	1-247-847-00	CARBON	4.7K	5%	1/6W	
R879	1-247-803-00	CARBON	68	5%	1/6W	
		VARIABLE RESISTOR				
RV800	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K				
RV801	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K				
RV802	1-228-720-00	RES, ADJ, CERAMIC CARBON 1K				
RV803	1-228-717-00	RES, ADJ, CERAMIC CARBON 220				
RV804	1-224-249-XX	RES, ADJ, METAL GLAZE 1K				
RV805	1-223-102-00	RES, ADJ, WIREWOUND 120				
RV806	1-228-727-00	RES, ADJ, CERAMIC CARBON 47K				
RV808	1-226-703-00	RES, ADJ, METAL GLAZE 10K				
		RELAY				
RY800	1-515-380-00	RELAY				
		TRANSFORMER				
T800 ⚠	1-437-082-11	HDT				
	*1-615-911-11	HA BOARD ********				
		CAPACITOR				
C501	1-123-332-00	ELECT	47MF	20%	25V	
C502	1-101-004-00	CERAMIC	0.01MF		50V	
C590	1-123-332-00	ELECT	47MF	20%	16V	
C591	1-130-794-00	FILM	0.22MF	10%	250V	
C592	1-130-800-00	FILM	2.2MF	10%	250V	
		DIODE				
D502	8-719-911-19	DIODE 1SS119				
D590	8-719-102-74	DIODE RD6.2E-N2				

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

HA HB X

Ref.No.	Part No.	Description	Remark
D591	8-719-000-28	THYRISTOR CR02AM-8	
D592	8-719-911-55	DIODE U05G	
		CONNECTOR	
HA1	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P	
HA2	*1-564-452-11	PLUG, CONNECTOR (2.5MM) 4P	
HA3	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P	
HA4	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P	
HA5	*1-564-452-41	PLUG, CONNECTOR (2.5MM) 4P	
HA6	*1-564-458-11	PLUG, CONNECTOR (2.5MM) 10P	
HA7	*1-564-450-11	PLUG, CONNECTOR (2.5MM) 2P	
HA8	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P	
HA9	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P	
HA10	*1-560-278-00	PLUG, CONNECTOR 3P	
		TRANSISTOR	
Q502	8-729-245-83	TRANSISTOR 2SC2458	
Q503	8-729-245-83	TRANSISTOR 2SC2458	
Q590	8-765-620-00	TRANSISTOR 2SD1015	
		RESISTOR	
R500	1-246-517-25	CARBON 68K 5% 1/4W	
R501	1-247-865-00	CARBON 27K 5% 1/6W	
R502	1-247-883-00	CARBON 150K 5% 1/6W	
R503	1-247-887-00	CARBON 220K 5% 1/6W	
R504	1-247-867-00	CARBON 33K 5% 1/6W	
R505	1-247-867-00	CARBON 33K 5% 1/6W	
R506	1-247-873-00	CARBON 56K 5% 1/6W	
R507	1-247-854-00	CARBON 9.1K 5% 1/6W	
R508	1-247-863-00	CARBON 22K 5% 1/6W	
R509	1-247-831-00	CARBON 1K 5% 1/6W	
R510	1-247-831-00	CARBON 1K 5% 1/6W	
R511	1-247-891-00	CARBON 330K 5% 1/6W	
R512	1-247-871-00	CARBON 47K 5% 1/6W	
R513	1-247-879-00	CARBON 100K 5% 1/6W	
R514	1-247-871-00	CARBON 47K 5% 1/6W	
R515	1-247-878-00	CARBON 91K 5% 1/6W	
R516	1-247-881-00	CARBON 120K 5% 1/6W	
R517	1-249-429-11	CARBON 10K 5% 1/6W	
R518	1-247-713-11	CARBON 1K 5% 1/4W	
R519	1-247-835-00	CARBON 1.5K 5% 1/6W	
R520	1-247-851-00	CARBON 6.8K 5% 1/6W	
R595	1-202-846-00	SOLID 470K 1/2W	
R596	1-247-871-00	CARBON 47K 5% 1/6W	
R598	1-247-817-00	CARBON 270 5% 1/6W	
R599	1-247-839-00	CARBON 2.2K 5% 1/8W	F
		VARIABLE RESISTOR	
RV511	1-230-760-11	RES, VAR, CARBON 1K	
RV512	1-230-762-11	RES, VAR, CARBON 20K	
RV513	1-230-711-11	RES, VAR, CARBON 20K	
RV514	1-230-711-11	RES, VAR, CARBON 20K	
RV516	1-230-710-11	RES, VAR, CARBON 10K	
RV517	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
RV518	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV519	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
		THERMISTOR	
TH502	1-800-944-00	THERMISTOR TH-4700	

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	*1-615-912-11	HB BOARD ********	
	*4-337-424-00	HOLDER (L), LED	
	*4-374-809-01	HOLDER (3 GANG), LED	
		DIODE	
D503	8-719-812-31	DIODE TLR123	
D504	8-719-812-32	DIODE TLY123	
D505	8-719-812-32	DIODE TLY123	
D506	8-719-812-32	DIODE TLY123	
D507	8-719-812-32	DIODE TLY123	
		CONNECTOR	
HB2	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
		SWITCH	
S505	1-554-118-00	SWITCH, PUSH (1 KEY)	
S506	1-554-118-00	SWITCH, PUSH (1 KEY)	
S507	1-554-118-00	SWITCH, PUSH (1 KEY)	
S508	1-554-118-00	SWITCH, PUSH (1 KEY)	
S509	1-554-118-00	SWITCH, PUSH (1 KEY)	
S510	1-554-118-00	SWITCH, PUSH (1 KEY)	

****

	*1-614-496-11	X BOARD *******	
	*4-337-424-00	HOLDER (L), LED	
		DIODE	
D680	8-719-812-33	DIODE TLG123A	

****

		MISCELLANEOUS **********	
	⚠1-451-265-11	DEFLECTION YOKE (SY-167)	
	1-452-032-00	MAGNET, DISK; 10MM ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ø	
	1-452-126-11	MAGNET	
	1-508-723-00	4P PLUG, DIN	
	⚠1-509-546-11	3P INLET	
	1-509-718-00	DIN 4P SOCKET	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
L901	1-426-043-12	COIL, DEGAUSSING	
S901	1-570-201-11	SWITCH, PUSH (AC POWER)(1 KEY)	
T801	1-439-358-11	TRANSFORMER ASSY , FLYBACK	
V901	8-737-151-05	CRT (A20JKU10X)	

****

ACCESSORIES AND PACKING MATERIALS

****

Part No.	Description	Remark
1-551-258-11	CORD, POWER	
1-508-723-00	4P PLUG, DIN	
3-548-372-00	BAG, POLYETHYLENE	
3-701-630-00	BAG, POLYETHYLENE	
4-374-870-01	CUSHION (UPPER)	
4-374-871-01	CUSHION (LOWER)	
4-374-881-01	INDIVIDUAL CARTON	
4-374-859-01	PLATE, NUMBER, TALLY	
4-482-130-11	MANUAL, INSTRUCTION	

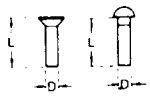
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

HARDWARE NOMENCLATURE

Screw:

– P 3 x 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only.*

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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PVM-9220ME

SONY
SERVICE MANUAL

AEP Model
Chassis No. SCC-681A-A

SUPPLEMENT-1

File this supplement with the service manual.

INTRODUCTION

Parts number modification of variable resistor.

About parts No. 1-615-911-12 of HA board, after that the shapes of variable resistors have modified, so maintain by following variable resistors.

☛ :Indicates modification portion

SECTION 7 ELECTRICAL PARTS LIST

Page 60

Ref. No.	Part No.	Description	Remark
		VARIABLE RESISTOR	
RV511	1-238-968-11	RES, VAR, CARBON 1K	
RV512	1-238-971-11	RES, VAR, CARBON 20K	
RV513	1-238-972-11	RES, VAR, CARBON 20K	
RV514	1-238-972-11	RES, VAR, CARBON 20K	
RV516	1-238-970-11	RES, VAR, CARBON 10K	
RV517	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
RV518	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV519	1-228-996-00	RES, ADJ, METAL GLAZE 47K	
		THERMISTOR	
TH502	1-800-944-00	THERMISTOR TH-4700	

Ref. No.	Part No.	Description	Remark
⚠	1-451-265-11	DEFLECTION YOKE (SY-167)	
	1-452-032-00	MAGNET, DISK; 10MMφ	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MMφ	
	1-452-126-11	MAGNET	
	1-508-723-00	4P PLUG, DIN	
⚠	1-509-546-11	3P INLET	
	1-509-718-00	DIN 4P SOCKET	

MICROFILM

9-963-450-81

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